

BUTANE-PROPANE

News

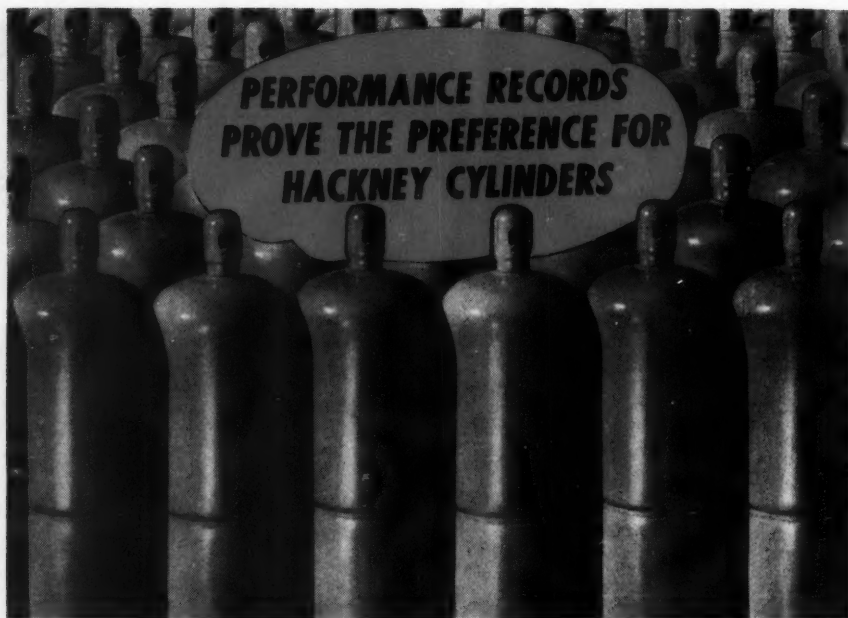
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JANUARY, 1941
In Two Sections . . . Part I



EVERY year, since the origin of the Butane-Propane industry, the preference for Hackney cylinders has increased. This fact is easily understood—when you study the performance records of thousands of Hackney liquid fuel cylinders in many types for hundreds of users.

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THE G. S. BLODGETT CO., INC.

53 MAPLE STREET, BURLINGTON, VERMONT



—Makers of Fine Ovens Since 1848

Volume 3
No. 1

BUTANE-PROPANE

News

Reg. U. S. Pat. Off.



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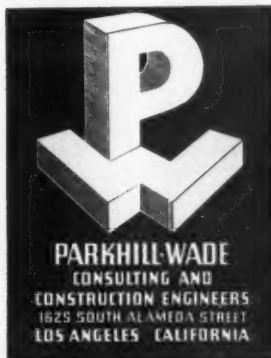
L. P. G. Municipal Systems

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and Tractor Conversions

and

**SPECIAL LIQUEFIED PETROLEUM GAS
APPLICATIONS**



JANUARY-1941

LETTERS

- **BUTANE-PROPANE News** welcomes communications from those identified with the liquefied petroleum gas industry, but readers will understand that this magazine does not necessarily concur in personal opinions so expressed.—Editor.

Gentlemen:

We have been advised that you can furnish authentic information as to the number of cubic feet of gas that a gallon of butane will produce.

We have installed a number of meters but all physical tests have varied and we need definite information so that we can set a standard price per cubic foot.

Texas

E. P. J.

In metering any gas, consideration must be given to pressures and temperatures. On Page 8 of handbook of Butane-Propane Gases (Revised Second Edition) you will find the cubic foot equivalents of butane and propane. Normal butane has 31.602 cu. ft. of vapor per gallon of liquid at 60° F. and 30 in. mercury pressure.—Ed.

Gentlemen:

Can you tell me if there is a concern that is making aluminum tubing and connections for connecting up gas stoves?

G. P. H.

Utah

Probably the Aluminum Company of America, with branches in many cities throughout the country, would be your best source of information. That firm, or its jobbers, stock aluminum tubing in 20- to 50-ft. random lengths (coiled). This is known as SSO alloy, annealed. We understand this has been approved by the American Gas Association for use in connecting up gas appliances.

Aluminum is used for tubing and connections in the gas industry but is restricted because of its cost. Copper is more commonly used. Aluminum tubing on airplanes has been very satisfactory as it is said to withstand vibrations very well.—Ed.

Gentlemen:

We have a small sales organization of 15 men operating out of stores located in our principal marketing centers and built along the lines and policies of an effective utility merchandise organization.

This letter is to ask for any helpful sales promotional ideas, suggestions or services to

further stimulate our man power and business.

A. H. U.

Louisiana

If you will refer to any of the past issues of BUTANE-PROPANE News you will find one or more articles which reveal the experiences of others engaged in selling in the LP-Gas field and which may provide you with many excellent selling ideas. Our November issue, for instance, had a number of excellent articles on this subject, and they appeared upon the following pages: 21, 24, 39, 50, 54, 90, 96, 100 and 106. Our principal objective in publishing such articles is to provide the industry with ideas which are practicable to others.—Ed.

Gentlemen:

We are very much interested in continuous subscription on your periodical, but under the present situation it is impossible for us to get U.S.A. \$ free for this purpose.

So you see we are only able to place our subscription order on the condition that you are willing to grant us credit until after the war.

NORSK SURSTOE &
VANDSTOFFABRIK A/S

Norway

We sympathize with your predicament and very willingly extend you the courtesy of subscription credits during the duration of the war.—Ed.

Gentlemen:

I am wondering if you can supply me with a couple of copies of the new N.B.F.U. Pamphlet No. 58, dated August, 1940, which I see by your November issue has been released. I need the latest information very much as I am shop inspector for three firms that are building butane and propane tanks.

I read BUTANE-PROPANE News each issue from cover to cover and find much interesting and valuable information in it.

E. G. MEDLEY

The Ocean Accident & Guarantee Corporation, Ltd.
Oklahoma, City, Oklahoma

We have asked the Dallas, Texas, office of Underwriters Laboratories, Inc., to mail you two copies of the new N.B.F.U. Pamphlet No. 58.—Ed.

USE OUR RESEARCH DEPARTMENT

The BUTANE-PROPANE News technical staff will gladly endeavor to answer all legitimate inquiries (except legal and financial) about the LPG industry which regular subscribers submit.—Editor.

QUALITY
TOKHEIM

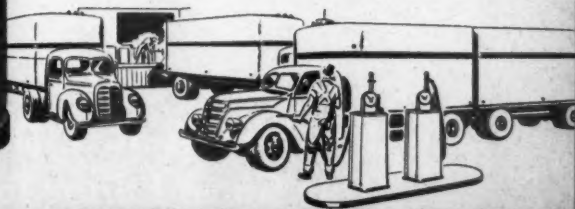
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2. Quality Equipment.
3. Nation-wide Sales and Service.

Tokheim Pumping and Dispensing Units represent the most complete and modern equipment available for handling Liquefied Petroleum Gas. The outstanding features and proved performance of Tokheim equipment are responsible for many users' adopting it as standard. Tokheim gives you the benefit of its forty years' experience in building quality dispensing equipment. Write for complete details—no obligation.

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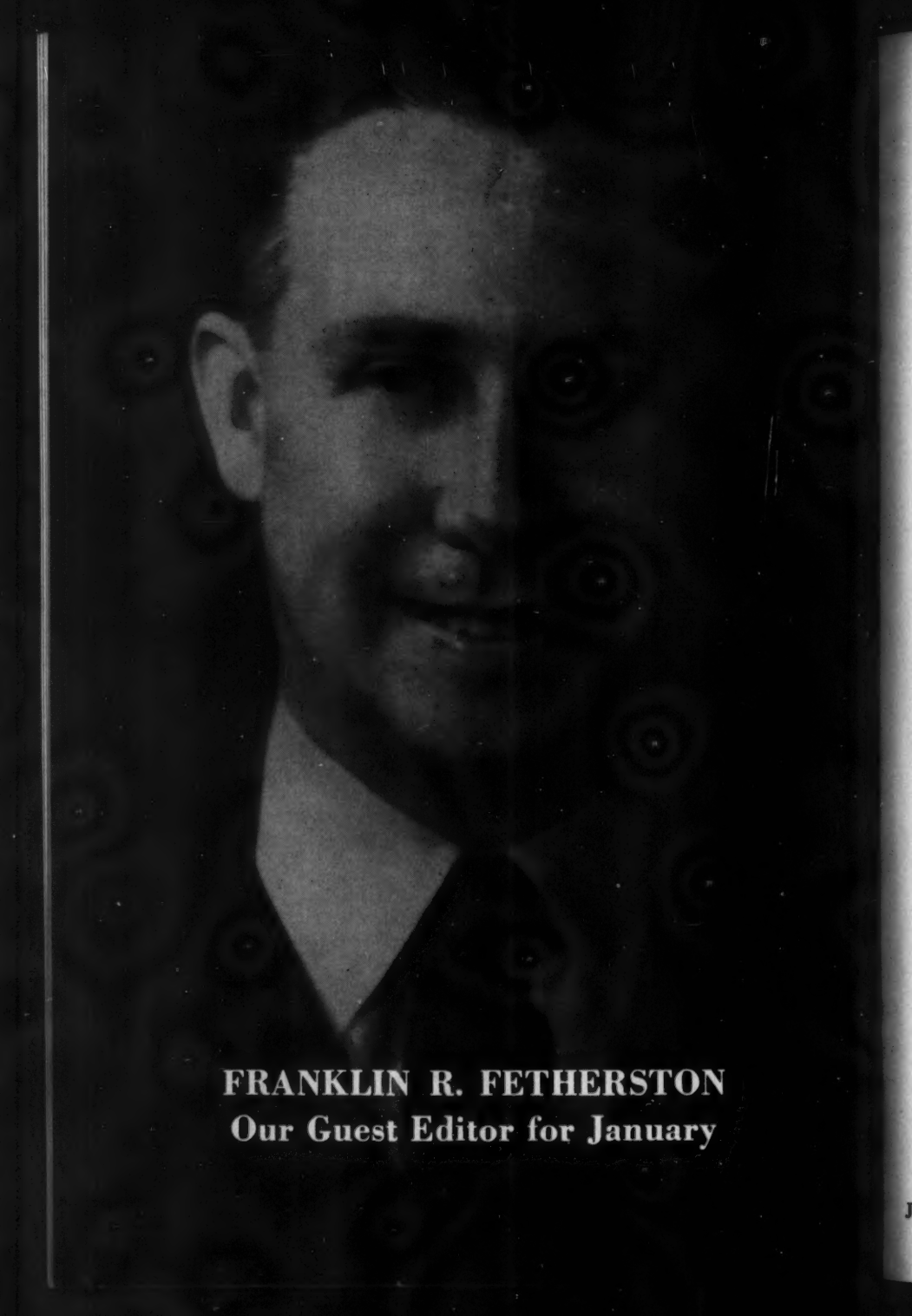
GENERAL PRODUCTS DEPARTMENT

DESIGNERS AND BUILDERS OF SUPERIOR EQUIPMENT

FORT WAYNE

SINCE 1901

INDIANA



FRANKLIN R. FETHERSTON
Our Guest Editor for January

THE HUMAN FACTOR

By Franklin R. Fetherston

Secretary, Liquefied Petroleum Gas Association, Inc.

AN editorial writer for a trade paper in an unrelated industry brought me the proof copy of an article he proposed to publish on the LP-Gas industry. He asked for comment. Throughout this article extraneous references were made to "unsound practices," "unstable operators," "chiseling dealers," and some even more distressing. They were promptly deleted. The author's information was said to have originated from industry sources.

The LP-Gas business is no different from any other in fundamental respects. It can be successfully promoted as a business only if the underlying premises that justify it are sound. Every business is the development of preconceived ideas based upon the facts as the persons concerned may know them. It is utter foolishness to assume that anyone would deliberately enter into a business adventure without being satisfied with the merit of the deal. What accounts for the variation in business success among individuals is that element of personality that we often refer to as the human factor.

One point that I wish to make is that false premises lead to bad results, and it is a false premise to assume that the views and business methods of others in the industry are always without merit. To talk about him in uncomplimentary terms leads to the impression of hostility, and creates hostility toward him by others. Any advantage that might be gained can only be temporary. The natural result is retaliation with consequent bickering and demoralizing influences. It also has a damaging effect upon the industry and is ammunition in the hands of competing industries. These energies should be utilized in cooperative and constructive efforts. Proper and careful references to our competitors, their traits and business acumen will avoid prejudicing others to their detriment and to our own.

EXPERIENCED

• When "bottled" gases were in their infancy "American" research already was focused upon developing special meters and instruments for handling them. Behind the complete "American" line is a century's pioneering of every genuine advance in gas measurement.



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AMERICAN
METER COMPANY
INCORPORATED (ESTABLISHED 1926)

1793

MAINLY BEYOND THE MAINS

1940 GROWTH

In this, the first issue of BUTANE-PROPANE *News* for 1941, we present our own estimate of the growth of the LP-Gas industry during the year that has just reached its close. We present the findings, not with any apologies, but in the full realization that they will be subject to the critical analyses of conflicting opinions.

The importance of these figures lies in the fact that for the first time an effort has been made by independent investigators, to appraise the progress of the industry as a whole. Every trade, every business, as it emerges from the adolescent stage begins to see the necessity of collecting factual information on its members' progress. Information thus collected becomes invaluable, as source material for presentation to the public at large, and as a continuing criterion by which the industry can measure its year-to-year progress.

The tempo is fast for 1941; producers, distributors and dealers all have set for themselves higher quotas than ever before. Just as these quotas will require a greater measure of individual application and effort, so also will they point the necessity of greater cooperative effort on the part of all factors in the industry. No part of this effort is of greater significance and greater potential value to the trade than that of compiling an accurate and continuing record of its progress.

FREEZE-UPS

Regulator freeze-ups resulting in interrupted service, irate customers and chilblains for the service men plagued the LP-Gas dealers in certain sections of the country last winter; and what with January here again it seems a good time to pass on a few practical suggestions that we have collected as we methodically tramp around the country asking other people how they run their business.

There doesn't have to be any freeze-up trouble providing

propane is received dry, kept dry and delivered dry to the customer. So the first step is to insist on a dry fuel from your supplier. A negative water content is ideal, but, not easy to accomplish. However you should be guaranteed a gas that does not contain over .04%. That is two gallons of water to a tank car, and even that amount can cause trouble under certain conditions.

The second step is to be sure that empty cylinders are kept closed tightly until they are refilled with gas. A partially opened valve on a cylinder allows the vapor to run out, and air from the atmosphere to enter the cylinder. Since the atmosphere always carries humidity to a greater or less degree, water is introduced in this way, and when the cylinder is again filled some of the water is picked up by the propane due to its hygroscopicity. Then when the pressure is returned at the regulator the reduction in temperature tends to form hydrates which cause freeze-up.

There is a reason too, why the difficulties always seem to occur with the so called "best customers." These are the customers that are using more gas, and because they are, it is entirely possible that at certain times of day and season these customers are drawing more B.t.u. per hour per hundred pound cylinder than the cylinder can deliver. Thirty cubic feet or approximately 75,000 B.t.u. per hour is the maximum load that can be placed on a cylinder without danger of loss of tank pressure.

So, precautionary point three is to make sure that there aren't too many appliances drawing gas from one cylinder at one time. Remember that an oven may burn 40,000 B.t.u., a water heater 20,000 to 40,000, a refrigerator from 3,000 to 5,000 and top burners on a gas range from 5,000 to 12,000 B.t.u. per hour. Added up, they total a load that is far above the maximum. Such a load should be so connected through the manifold that gas is being drawn simultaneously from at least two cylinders.

That's about all we have uncovered on this subject. Except that you shouldn't have much trouble this winter with refinery propane, since more care is being used in dehydrating, and as an extra safeguard your supplier is probably dumping in from one to five gallons of alcohol to a tank car and saying nothing about it.

1940 SALES UP 31.3%

**70,000,000-Gallon Increase Over 1939
Brings Estimated Total to 293,600,000**

ADVANCE figures where available, supplemented by informal estimates by leading producers, dealers and distributors of liquefied petroleum gas indicate that the final official tabulation of sales of butane and propane for 1940 will be approximately 293,600,000 gallons. This represents an increase of 31.3% over the national figures for 1939, as officially compiled for that year by the United States Bureau of Mines.

The greatest percentage of increase in marketed production appears among the Pacific Coast companies, whose total gallonage has risen from 48,497,000 for 1939 to approximately 66,000,000 for the year just ending, or an increase of slightly under 37%. For the balance of the United States, the 1939 total of 175,083,000 gallons rises to 227,600,000 gallons for 1940, showing an increase of 30%.

If subsequently verified by the official figures, this will put the Pacific Coast sales up to about 22.5% of the United States total, as compared to this area's last year showing of 21.7%.

No exact tabulation has ever been made of the actual number of domestic consumers of butane, propane, and butane-propane blends, so any statistics advanced in this connection can be, at the best, only the weighed average of the most

By ELLIOTT TAYLOR

sagacious guesses. However, the sales of cylinders, tanks, regulators, and other equipment going into every installation cast enough light on this important phase of the ultimate consumption of these gases to make such an estimate possible. New domestic accounts, thus estimated, come to a total of 181,250 for 1940, as compared to 150,000 new residential customers reported to have been added in 1939.

The reasonable degree of accuracy of the above estimate of new domestic accounts is further attested by preliminary figures just compiled by the Association of Gas Appliance and Equipment Manufacturers. Reports for the first nine months of last year, submitted by 53% of the stove manufacturers, indicate that the final tabulation of ranges sold for use with LP-Gas during 1940 will be between 180,000 and 200,000 units. Present indications are that as high as 15% of all gas ranges sold in the United States was designed for use with butane or propane.

Since the number of domestic consumers in 1939 was believed to be about 800,000, this new 181,250 would bring the total to just short of a million homes now enjoying the advantages of LP-Gas. As any errors in calculation have been de-

liberately directed toward an understatement of both the growth and the extent of the industry, those who like to deal in round numbers would probably make no great mistake in estimating the number of domestic accounts as of December 31, 1940, at 1,000,000 total.

While it would not be feasible, on the basis of the reports now available, to attempt to break down the total estimated gallonage figures as to domestic, industrial, and internal combustion engine fuels, there are indications that both industrial and internal combustion engine gallonage will show higher percentages of increase than will residential.

War industries activities, the decline of the natural gas supply in some small Eastern fields, and an outright competitive displacement of manufactured gas have all been factors that indicate a relatively higher percentage of LP-Gas going into manufacturing and heat-treating processes than into homes. As regards internal combustion engines, this development has been confined largely to the Pacific Coast and Mid-continent areas, but the

number of units using butane or butane-propane blends will have risen from about 16,000 in 1939 to 20,000 at the end of 1940, if the trend for the first six months of last year continued until its close.

Reported in BUTANE-PROPANE *News* as having been constructed during 1940 were 78 bulk plants, which, at a conservatively estimated cost of \$15,000 each, would represent an investment of \$1,170,000. To this may be added an additional investment in physical equipment on consumers' premises of \$35 per installation, which for the 181,250 installations made in 1940, would equal another \$6,343,750 spent for cylinders, tanks, regulators, meters, tubing, and valves.

If the average expenditure per consumer for appliances totals the \$115 per installation that some dealers report, the appliance market represented by LP-Gas delivered in bottles or cylinders or underground tanks (but not including any piped-gas town installations, the increase in which is at present not known) would aggregate \$20,843,750.

National L.P.G.A. Will Meet in Chicago

The 11th annual convention of the national Liquefied Petroleum Gas Association, Inc., will be held on Feb. 24-25 in Chicago.

Headquarters will be at the Palmer House. In addition to the election of officers for the new term, there will be a full program of talks on industry subjects and exhibits by manufacturers of equipment and appliances.

The program committee consists of E. L. Mills, chairman; B. D. Geroy; F. B. Boice, and W. H. Miller.

44,000 Meals Cooked for \$80 With Butane

WHILE hundreds of hilarious boys last summer splashed in the surf of the blue Pacific, or fortified strategic points from which to pop off imaginary invaders hoving in from Westward, or "played Indian" in the rolling hills of Santa Catalina Island, off the southern California coast, busy cooks and helpers were experiencing the new thrills of preparing and serving the tidy total of 44,000 meals on butane-burning ranges.

The event was the annual summer camp for boys of the Pasadena Y.M.C.A. Always before, fuel oil and gasoline had been used for cooking and water heating, with the tents filled with fumes and soot peppering the vitals and gumming up dishes and linens.

Butane Brought City Conveniences

Then someone had the happy thought of using butane, and what had been weeks of distressing inconvenience to employes in former seasons became, in a day, the equivalent of a city restaurant provided with natural gas, free of fuel odors and clean enough to satisfy the most fastidious.

More specifically, this is the story:

After careful consideration of all facts appearing to the use of butane for cooking and heating purposes in the Y.M.C.A. Orizaba

● LOUIS J. MEILLETTE, secretary of the Pasadena Y.M.C.A., and L. W. Largent, building superintendent for the Orizaba summer camp for boys, last summer substituted butane for the fuel oil and gasoline that had formerly been used for cooking and water heating. The result was magical, changing soot and inconvenience formerly experienced to the ease and cleanliness found in cooking with natural gas. And important economies resulted, too. They tell in the accompanying article an interesting story of what butane did for them.—Editor.

Camp on Catalina Island, we made a complete change from fuel oil and gasoline to butane.

The fuel oil had been used to cook with and at the same time heat our water for washing dishes, by a water leg running through the stove. The gasoline was used in conjunction with gasoline burners to heat our dish rinse water. We replaced the old fuel oil stove with a two-oven, six burner, large grill range. We also installed a small round No. 25 water heater of 15-gal. capacity for our kitchen hot water, and three large burners to heat our rinse water.

What the Changeover Accomplished

This new butane installation did several things for our camp:

1. It did away with the soot that is always present when burn-

L. W. LARGENT



ing fuel oil. This soot would fly round and get in the food, smudge up the dishes, make the floor

black in the kitchen and dining room and occasionally prevented us from preparing a meal due to its stopping up the draft.

2. The cooks' helpers, under the fuel oil system, had to get up about two and one-half hours before breakfast in order to start the fire and heat the stove before they could cook. With butane the time was about 30 minutes.

3. The new stove with butane gave us heat where we wanted it; in other words, if we wanted to heat one oven we could do so without heating the whole stove. If we wanted hot water, only, we could light our heater. Briefly, we modernized our cooking and hot water system. The kitchen was much cooler, too.

Our summer camping season started June 4 and closed Sept. 12, which made 100 days of camping. Our total number of meals served was 44,000. In addition to the 970 boys who were there in successive groups for from 10 to 30 days for each contingent, there were 16 members on the staff and a varying number of weekly visitors.

In making several tests with the equipment it was determined that

L. J. MEILLETTE



our total number of gallons was 1100 and by using 50-gal. tanks and

checking the time it took to use each tank and having a separate regulator for each piece of equipment, we found that the stove averaged 5 gals. a day. Then there were needed three gals. a day for the dish washing heater, and 3 gals. a day for the hot water heater, making a total of 11 gals. a day for all of our butane operations.

Saved 34% of Former Cost

The stove and hot water heater used 800 gals. during the Summer, which cost \$80. Our stove oil cost averaged \$126, which gave us a saving of over 36%. Our hot water dish rinse using three gals. per day, totaled 300 gals., or \$30. Our gasoline cost was \$41, making a saving of over 25%. Our total bill for gasoline and stove oil was \$167. Our total butane cost was \$110, so the total saved was 34%.

Some of our problems with the gas was that the steamship company was prohibited from hauling full drums, but would return our empty ones. Therefore, we had to use our boat and barge for transportation. Some of the tanks being filled to capacity, after laying out in the sun, popped off due to over-heat. No damage was done, however, except to frighten the boys.



Camp Orizaba, five miles from Avalon, Catalina Island, where Pasadena Y.M.C.A. boy's camp is located and where butane revolutionized cooking and water heating.

We received one 50-gal. drum that had been used on a truck and the proper connections had not been put on for cooking and our regulator and pipe frosted and froze solid. That was corrected by installing the proper fittings and placing the outlet valve above the liquid. Our kitchen is open to the wind and we found our fire out several times due to drafts, but that was taken care of by installing doors.

Planning For Next Year

All-in-all, we are delighted with our first experience with butane and, needless to say, it will be used next year. Our plan is to install four tanks of 250 gals. each, and we anticipate that such an amount will

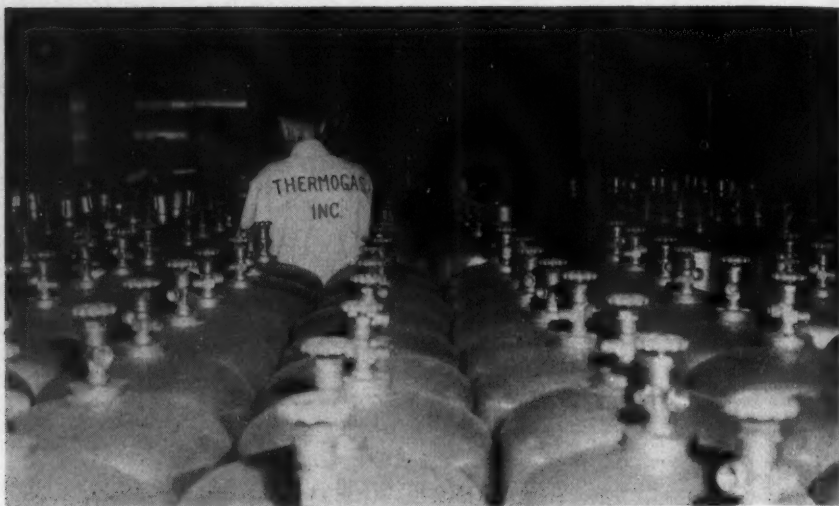
see us through the season. It may be added that the boys were much interested in the butane hook-up and those who had visited the camp in previous year appreciated the change in fuel that made the camp more enjoyable and convenient.



Safety Code Proposed For Washington

State regulations governing the handling of liquefied petroleum gases in Washington will be sought by Ed. Sorger, safety supervisor of the State department of labor and industries, according to recent news accounts.

Among other clauses which will be recommended is one requiring odorization of all LP-Gases used in the State of Washington.



Filled cylinders ready for shipment. Ray Berkey, shipping clerk.

Service a Customer— Sell His Neighbor!

CONCEIVED and executed as a program to build dealer and consumer confidence, the Thermogas Co., Inc., of Des Moines, Iowa, now conducts an annual instruction course for intensive training of dealers and servicemen in the installation and servicing of bottled gas systems throughout the company's wide-spread territory in Iowa and adjoining states.

With an organization totaling 300 dealers and serving an aggregate of more than 15,000 customers, our company has recognized the increasing importance of acquainting its personnel with the best practices of the industry and the

By CHARLES O. RUSSELL*
Secretary, Thermogas Company, Inc.
Des Moines, Iowa

public with our earnest desire to protect it from all hazards and to give it a service that matches that of the public utilities in large cities.

We just completed our last meeting on Oct. 28, at which time an examination was held and certificates awarded to those making the required grades. This examination covered, of course, the lectures given, with special emphasis on installation and servicing.

* Chairman, Midwest Section, Liquefied Petroleum Gas Association.

We feel that this school, followed by the examination and certificate award, was of two-fold value, in that it not only accomplished the desired instruction and education on installation and servicing, but also had value to the dealer through imparting confidence to prospects in his ability to render a complete and satisfactory service.

Here is an outline of this year's course:

Thorough installation demonstrations, with lectures and discussions; lecture upon increasing sales and customer goodwill with "personalized" deliveries; appliance and regulator servicing and adjustment; lecture on profit and non-profit service; special appliance and equipment utilization; oxy-propane cutting demonstration; automatic throw-over equipment and automatic water heater demonstrations; written examinations.

The instructors this year were W. A. Christopherson and Elmer

Schmidt, of the Thermogas Co., and Harris A. Goodwin, of The Bastian-Blessing Co., Chicago.

After the meeting was over we had many favorable comments from the dealers as to the benefit they felt they had derived from it. One dealer expressed his willingness to pay more for our gas, (due to being a greater distance from our shipping point and paying more freight on his shipments) because of the service rendered by the Thermogas Co., as exemplified by the school instruction course, which he thought was something of vital importance to him and warranted paying such a premium.

Our instruction course, however, is by no means the limit of the cooperation we extend dealers. We have a field organization of two men contacting and rendering service to the dealer organization. We have a retail organization employ-

The bulk plant of one of the Thermogas dealers—the Johnson Hardware of Zeoring, Iowa. This plant complies with all safety principles and regulations and is one of the finest dealer facilities in the state.





ing three salesmen servicing an area of some 20 miles around Des Moines in the retail department. Each dealer serves the town in which he is located and the tributary territory.

The method of distribution to the dealer provides for his hauling his own gas from Des Moines, or ordering shipments over common carriers. The field men contact the dealers periodically to render sales and service assistance and in every way possible cooperate with the dealer to enlarge his operations.

The gas is ordered by the dealer in various quantities, shipment going forward the day each order is received. The dealer sends in the empty cylinders at his convenience, inasmuch as the cylinders are handled on an exchange basis and not on a basis of filling particular cylinders for each dealer.

We handle two good gas ranges in our warehouse stock for the convenience of our dealers. The dealers buy their appliances from various sources and are not requested or required to purchase them from us. We carry the appliances as a convenience to them.

We do request, however, that the appliances they handle are A.G.A. approved and ones that we know to be satisfactory.

Our dealer organization is trained largely by our field men. For example, when the dealer is



Painting cylinder prior to refilling. Each cylinder is repainted and checked each return-trip to plant.

first established he is requested to contact the company upon the first three sales, and the field man goes out with him to make the first three installations so as to properly school and educate him on complying with state regulations governing the installation of bottled gas systems and other facts connected with installing and servicing.

The Thermogas Co. is opposed to the idea of sacrificing service and in short-cutting in equipment and dealer assistance in order to be able to sell its products at a lower price. We believe in maintaining a well-rounded program, and feel that the dealer's best interests are served by such a practice.

One of our most successful advertising mediums is the annual exhibit at the Iowa State Fair. There, each year, we have a representative display and due to the large

Opposite page (Above): Charles Russell at left, Walter R. Christopherson, right. (Below): A corner of the sales and display floor. Roy Large, salesman is at left and Emma Albright, secretary to Mr. Russell, at right.



rural attendance we reach many potential prospects for our product.

Thermogas Co., Inc., was organized as a partnership in May, 1931, under the name Pentane Natural Gas Co. The original partners were W. E. Shettlemore and myself. We were at that time handling only pentane fuel and servicing the old absorption type cold process plants and the Delcogas systems. Also selling a pentane plant of our own manufacture. We were incorporated in 1933, and Mr. Shettlemore was named President. In the Fall of 1934 we started installing underground butane systems, metering the gas to the customers on a therm basis. In the late Fall of 1935 we put in propane storage, started the conventional 100-lb. cylinder above-ground installations and abandoned the installation of underground butane.

Progress was fairly rapid in the aboveground operations, and by March of 1938 there were a large number of users. On March 15, 1938, W. E. Shettlemore and Mrs. Shettlemore sold their interest in the company to Rufus W. Scott, Walter R. Christopherson and myself. Since that time practically all butane systems have been removed. The 100-lb. system has been our main type of business, and in 1939 we added the 20-lb. cash-and-carry service for our dealer organization.

During the past five years various additions have been made to



Regulator Repair and Testing Station, put in as a dealer service so that regulators could be repaired locally rather than having to ship them to factory. Elmer Schmidt, man in charge of work, is shown.

the plant to keep up with an ever-increasing volume and growing dealer organization. At the present time there is a new building projected for the purpose of installing equipment to give the propane cylinders their quintennial test. We feel that the present plant is quite complete, in that it has adequate cylinder dock storage, four springless dial Toledo scales, paint room, regulator testing and repair equipment, a large appliance display floor, model kitchen for retail salesmen, and warehouse for appliances. We have our own private trackage in the yard in addition to railroad trackage alongside the property where stoves and cylinders are unloaded. A total of 21 employees comprise the organization.

Opposite page (Above): Ray Berkey, shipping clerk, consults map on wall for shipping location and information. (Below): Loading manifold, with scales.

MOISTURE IN GAS

AND HOW TO ELIMINATE IT

THE problem of moisture in gas and its elimination is becoming increasingly serious by virtue of its own action. Water, whether in liquid or moisture, plus cold, constitutes one of the most annoying problems confronting us today.

There are several cases of trouble that can develop from water conditions that are so closely allied to each other, that the actual case of trouble may be overlooked and another trouble call from the customer will be had. An analogy would be: Our car fails to start and the mechanic jiggles the wires till the motor does start, only to stop a short time later. Then he fiddles with the carburetor and does find trash there. Now this trash was the cause of the trouble all the time but it took two calls to find it.

Three Sources of Trouble

We get a call from a customer, "My gas was all right yesterday but this morning I can't cook at all." From the desk this may mean one of several things, or all of them may have happened. There are three separate and distinct cases of trou-



P. G. BOYD

- P. G. BOYD, vice president of Air-lene Gas Co., Fulton, Ky., delivered the accompanying paper at the Second Annual Sales and Service Meeting of the National Butane Gas Co. in Memphis, Tenn., Dec. 16. It discusses a subject of wide interest to the liquefied petroleum gas industry.—Editor.

ble that can be encountered. All are basically water and cold, but derive from different sources. Water in solution, water in entrainment, and water from the atmosphere.

Water in solution is the most difficult to identify as it is very minute in action and does not lend itself readily to inspection. A film of water no greater than that needed to stick a postage stamp will definitely stop a regulator from functioning if it gets on the valve seat of the regulator under favorable temperature conditions. A slight tap on the regulator that has stopped under this condition will start it to operating again. If this is not cleared at this time another call will result and again until either a temperature change to the warmer side, or cleaning is done. The actual nature of the action is a fragile weld but sufficient to stop the regulator occurring on the seat valve. This is probably the most common of all regulator troubles encountered by the service men. It will occur to either liquid or vapor regulators but in the case of liquid types it is more severe. Some oper-

ators have poured warm water on the regulator and prayed for warmer weather. We have heard of people building fires in the curb boxes, and of others placing lights in them to keep the regulator warm. None of these gets to the real seat of the trouble and until the water is gotten out of the way the fault can and often does crop up later.

Water Creeps Up Sides

Water in entrainment, apparently creeps up the sides of the tank to the pipe and on to the regulator seat where it will collect in drops. This will stay there and freeze and weld the regulator open, shut or at any point in between, depending on the particular condition at that time. This water is easily noted as it will always be in quantity, even sometimes as much as a thimble full.

By water from the atmosphere is meant the water that collects on the open side of the regulator diaphragm. This water gets into the regulator through the vent either from a flooded curb box or by the breathing action over a long period of time. In any event the water will freeze under the right temperature condition either from the natural refrigeration action of the regulator or from extreme cold weather. The result is that the diaphragm is locked or jammed and no action can take place. It can jam in any position and the result will be wide open, completely closed, or just barely open and the equipment will not operate properly. This is the most easily located case of trouble as no adjustment on the regulator will affect it. It is neces-

sary to disassemble and clean the regulator. This trouble may be reduced by placing a small amount of glycerine on the adjustment side of the regulator. Also, if the curb box is flooding, install a high vent tube. Probably 60% of the regulators have this type of water condition.

Now for a discussion of the sources of water. Water in solution; this water is the most difficult to trap and is also the easiest to find in evidence in the system. Its source is from two places. One is the water shipped in the liquid from the refinery, and we have been informed that probably there is one gallon of water to each car of liquid gas received. This is not water in entrainment, but in solution, and is present in varying amounts depending on the temperature of the liquid at the time of filling the tank car.

Water and Oil May Mix

Liquid petroleums have an apparent humidity similar to that encountered in the atmosphere and also entirely dependent upon temperatures. It is of course far less in quantity. Another source is from water trapped in the tank by whatever means. We have assumed that an oil base liquid and water will not mix, but this is only partly true. A certain part of the water in contact with a liquid petroleum will go into solution depending on temperatures involved. It will also leave the liquid and become water in entrainment if the temperature is lowered. Since this does happen we can have two separate problems merging into one.

Water in entrainment; this water can and does come from several sources. One the water left from the hydrostatic test and another is that left from the air test. Both of the sources can be stopped by closer control at the point of manufacture. The third and the one not so easily to control, is the one we encounter while refilling tanks. Especially is this true on rainy days, as all hose and valves dripping water tend to fill the valves with water. Even that little absorbed by the hose and the valves on dry days will eventually accumulate into a quantity that will cause trouble.

True, Believe It or Not

This water apparently does two things; (1), it will creep by means similar to capillary attraction, through the pipe and onto the regulator seat where the trouble occurs; (2), it will contaminate the liquid gas and collect in the regulator in the same place but in lesser quantity. You may ask how it can leave the liquid and be in the vapor. Rest assured that it will and also the vapor passes through a pipe that has moisture present where it can pick up some additional water vapor under favorable conditions.

Elimination of these sources of water will stop the trouble, but it is easier said than done. These things are necessary: Closer control by the plant manufacturer to eliminate that water heretofore shipped in the plant; more care in the filling of the systems. The second will help but will not completely stop the water, so additional remedies are needed. There have been many of them tried and found not

worthy of mention. One that is good but too expensive for small installations is the artificial vaporizer. Another method used in recent practice is that of placing a dehydrator just ahead of the regulator, especially in the liquid feed systems.

The use of the dehydrators is of such recent date that no figures can be given at this time as to their life or effectiveness. It can be stated that it is apparently a step in the right direction from a logical analysis of the troubles. They have been under severe trial and so far are doing their allotted task properly. The cost of these dehydrators is within bounds and experimentation can be carried on by most any operator. Their function is to trap all water regardless of its source before it can reach the regulator.

Will Test New Method

There is a natural phenomenon inherent in regulators, especially those used in the "liquid feed flash vaporization," that is being discussed with various interested ones in the industry. Since it is in the preliminary stage no actual tests have been made to date, but will be tested in the near future. Briefly, since all regulators have a natural refrigeration action present, it is thought that this can be used to scour the gas of nearly all the water present in any form, leaving only a trace for the dehydrator to remove. Should this prove feasible, this unit will be marketed and should not be expensive to purchase.

Bottled or Piped—It's Metered!

CONSTRUCTION of a new propane bulk station to be built in Aberdeen, S. D., has been recently announced by The Minngas Co. of Tracy, Minn. The plant will be of standard design, and will include a concrete unloading dock, bottling plant, and warehouse to house equipment, cylinders and other equipment for resale.



H. H. HENLEY

An expenditure of approximately \$25,000 will be made for the bottling plant, which will include a 70-ft. tank weighing more than 50 tons.

A new company, to be known as the Dakota Minngas Co. is being formed, to operate the new station, but will be controlled by the Minngas Co.

The new firm will bring in propane gas in tank cars. It will be bottled in the Aberdeen plant, and wholesaled through dealers in all but the southern part of South Dakota and into sections of North Dakota.

Central Distribution Point

According to H. H. Henley, president of the Minngas Co., the advantages of Aberdeen as a central distribution point motivated the

expansion. The company already has 70 wholesale dealers in South Dakota, supplied from Tracy, and installation of the plant in Aberdeen will result in a saving on freight as well as faster service, Mr. Henley indicated. The firm's present territory extends into the west-river area of the state and as far into North Dakota as Reeder.

In Tracy, Minngas headquarters, a 15,000-gal. storage tank is maintained with the required pumping equipment and loading docks in its warehouse for filling tanks from dealers who own their own cylinders on a wholesale basis.

Retail Basis

In addition to its dealer trade, the Minngas Co. is also serving gas on a retail basis in the districts surrounding Tracy, giving metered service in some 26 towns in the immediate vicinity. Propane gas, only, is sold on a public utility basis.

The retail customers in this territory are served gas in one of three methods. Originally, as gas applications are received, the customer is given service immediately by the installation of a meter and regulator in the customer's basement and connecting to the customer's appliances. On the outside of the building, a 150-lb. content cylinder is installed with a first stage regulator.

As customers become more closely located, underground tanks in-



Minngas storage facilities and bottling plant.

terconnected with copper tubing are installed in the alleys. The individual 150-lb. cylinders are removed and again installed in outlying districts. This grouping is done only when there are sufficient customers to make this the cheapest method of operation, requiring a smaller investment than the installation of the individual 150-lb. cylinders.

In Tracy, however, when these groups have enlarged and come closer in contact with each other, a number of them have been interconnected directly to the 15,000-gal. storage tank, to the end that the company now has several miles of underground copper mains, laterals, and service connections.

Regardless of the method of service, measurement of gas is by meters located in the customer's basement. The meter dial reads in the equivalent of 530 B.t.u. gas.

In the other towns in which the company has franchises for the use of streets and alleys, the same sys-

tem is followed except that there are no large storage facilities as in Tracy. On these cases groups are served from larger underground cylinders installed in the alleys or boulevards. These mains are operated at 15-lbs. pressure with reducing regulators in the basements ahead of the meter in each customer's place.

Rapid Growth

Mr. Henley states that this type of service has grown very rapidly and has been readily accepted by the public in such territory. His point is well illustrated by the fact that the company's July gas sales this year were up 317% from the corresponding month in 1939.

Opposite Page: (Top): A propane truck for retail metered service. **(Center):** A 150-lb. cylinder which gives metered service to this 3-apt. building. **(Bottom):** Kenneth Parsons, of E. A. Parsons & Son, Redfield, S. D., and H. H. Henley.



HEAT CAN BE SOLD

Sixteen Reasons Why Gas Excels and Three Ways for Signing Up Prospects

By G. J. KOLLOCK

Peerless Manufacturing Co.,
Louisville, Ky.

IN order to sell gas heat correctly, we should have a clear understanding of the principals regarding the transfer of heat. With this thought in mind, suppose we first mention the methods of heat transfer or heat flow, so that we will all be thinking along the same line and can more easily follow a logical train of thought.

When gas is used on a burner, with gas pressure and adjustments correct for 100% rating of the burner and complete oxidation of the gas, we have a release of 20,000 B.t.u.'s per hour. As the gas burns we notice very little heat thrown sideways out into the room as practically all the heat released goes up towards the ceiling. If we put radiants on the burner, after they are heated to incandescence we note a much larger amount of heat thrown sideways into the room and a smaller amount going upward. You realize, of course, the rate of heat release has not been changed. You have seen two methods of heat flow, one perpendicular and one horizontal. As there are three methods of heat transfer, we will discuss these principals.

Radiation

Radiation means the transfer of heat from one object to another

without affecting the medium which separates the two. The earth, for instance is warmed by the sun, but the temperature of the void which separates the two is not affected.

If you should go up in a plane and be several miles closer to the

● The use of liquefied petroleum gas for space heating offers the industry one of its greatest fields for load building. Increasingly are dealers devoting sales effort to this end. Central heating plants, floor and wall heaters, radiators, circulators, cabinets, fireplace logs — whatever the method, the service to the consumer is superior to all other forms of house warming. And there is a profit in selling the appliance as well as the fuel. So it is not strange that at the Fall convention of Green's Fuel, Inc., dealers, in Sarasota, Fla., several papers were devoted to this subject. One of them—full of valuable sales ideas—was delivered by G. J. Kollock, of Peerless Manufacturing Co., Louisville, Ky., and in slightly abstracted form, appears here.—Ed.



G. J. KOLLOCK

sun, you would find it extremely cold, yet, the same sun's heat rays passing through this space has warmed the earth.

A further illustration would be to place an electric fan so as to blow at right angles to this heater, letting it blow directly across the path of radiant heat. If you stand in front of the heater, you will feel the radiant heat.

Convection

Convection means the transfer of heat from one place to another through the medium of some moving body or substance.

An example of this would be a hot air furnace, floor furnace or boiler, where either hot air, steam or hot water transfers the heat from the furnace to the place to be heated.

In the case of this radiant heater, the air adjacent to the heater becomes hot and rises as convected heat to transfer the heat towards the ceiling.

Conduction

Conduction means the transfer of heat from one part of a substance to another part of the same substance or another substance if they are in actual contact.

An example would be heating one end of an iron rod and observing the opposite end become heated by heat passing through the rod.

With these principals of heat transfer in mind, let us discuss their application. In heating homes, we are only concerned with radiation and convection as the methods of heat transfer.

From the above, it would indicate that in heating homes or busi-

ness places, when high ceilings are encountered the radiant heat method would be more economical to operate as less heat would be lost through the ceiling. In general this is correct, but it is more difficult to evenly heat a large space with radiant heat than with convected heat.

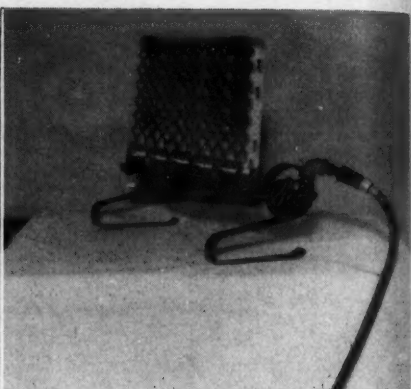
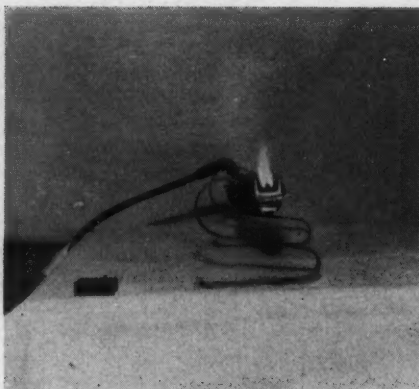
In recommending the space heater for a home, then, the customer's idea of what is wanted should be guided with your good judgment to determine whether radiant heat, radiant and convected heat or convected heat only should be used.

In this section of the country there are homes with wall-type, insert radiant heaters installed in every room. This has the advantage of taking up no floor space and should also prove economical in heating the home.

In recent years, floor furnaces heating by convection only, are proving very popular and doing an uncanny job of heating fairly even all rooms connected to the one in which the furnace is installed. Sometimes a floor furnace, gas steam radiator or circulator installed in a central location will handle the job of satisfactorily heating the small house.

A combination hard to beat in the Georgia and Alabama territory for heating small homes is a floor furnace in the hall, radiant heater or gas steam radiator in the living room, and a radiant heater in the bath room.

For the bath room, radiant heat has a definite advantage. It warms the wet body, whereas convected heat may have a cooling effect sim-



(Left) Practically all of the heat from this open burner is convected heat and moves up towards ceiling. When radiants were put on same burner, (Right) demonstration showed a much larger quantity of radiant heat going horizontally out into room and less convected heat rising upward.

ilar to an electric fan in the summer causing a rapid evaporation of moisture from the body.

When selling gas heat, we find buyers respond to the following advantages of the fuel:

1—*Convenient.* Easy to handle; always ready to use at any place needed.

2—*Fast.* Instant heat at the turn of the valve. No waiting for the fire to kindle and burn.

3—*Clean.* Makes no smoke, soot or ashes. No cleaning up the hearth after starting the fire. You do not have to carry out the ashes and then clean the fly ash off the furniture. Does not soil the hands, clothes, linen, draperies or walls.

4—*Modern.* Gas heat is modern and the appliances are designed to fit the furnishings of the home, whether it be modern, semi-modern or of period design.

5—*Comfort.* Gas heat makes the home comfortable even though

it is cold or raining outside.

6—*Flexible.* Any amount of heat desired, when and where needed. The gas valve may be opened all the way for a quick heat-up and then turned to just the amount to off-set the heat loss of the home.

7—*Economical.* Compared to other fuels, gas is economical to use. To the bare cost of the fuel, other advantages are: saving of labor, painting, laundry bills, drapery cleaning, storage space for fuel, time, and maintenance and repairs on heating equipment.

8—*Dependable.* Gas heat is dependable. Your gas company calls at regular intervals to see that you do not run out of gas. It is always ready for instant use and always available.

9—*Healthful.* Gas heat is healthful. The heat rays from a radiant heater are comparable to the penetrating rays of the sun. Many well known authorities

recommend radiant heat for rheumatism, neuralgia, backache, sore muscles and other similar ailments. It builds up health by rendering a clean heat with even temperature and also tends to prevent colds.

10—*Control Operation.* Gas heat is easily controlled by manual or automatic operation for the amount you want and the time you want it.

11—*Time-Saving.* More time to sleep in the morning. Extra time for leisure and pleasure.

12—*Safety.* Gas is burned in appliances that are designed, tested and approved for safe operation.

13—*Floor Space-Saving.* Appliances may be obtained that require no floor space.

14—*Design.* Appliances are made in numerous sizes and designs to suit any size house or anyone's pocket book and taste.

15—*Efficiency.* Gas heating equipment operates at a higher efficiency than most other types of heating equipment.

16—*Maintenance.* It requires very little maintenance and eliminates expensive service work. No annual repair bills. It cannot clog with soot or burn out grates.

Let's bear in mind the four steps that every sales goes through regardless of whether the sale is made in five minutes or two years: Attention, Interest, Desire, Action.

We should make our opening remarks such that they will get attention and as attention can only be held for a brief spell, this should be followed immediately by something that is of interest. From here we should create a desire for what we are selling and then, most

important of all, obtain action. In other words, *close!*

In my opinion, thousands of sales are lost or delayed every day, because the salesman has not asked for the order. Many salesmen know their product so well and get so enthused in explaining all details to the prospect, that they neglect to ask for the order.

In closing, I believe I can safely say that the salesman that earnestly follows the three following rules always makes a success in selling:

1. Know your product and what it will do.

This will create confidence in the mind of the prospect that you know your business and will also insure the right appliance being sold correctly. More sales will be made if the prospect believes the salesman an expert on gas heating and by selling the correct appliances, results in—satisfied customers and further advertising gas for heating.

2. Canvas new prospects daily.

Tell your manager how many new prospects you are going to call on each day and live up to it. You will not close all jobs on the first call, so some time will be required for call backs. By intelligently planning each day's work so that the minimum time will be required between calls, then the maximum number of contacts can be made.

3. Ask prospect for order.

When the majority of people are in the market for something, they want to be sold and wait to be sold. In asking for the order, the answer may be "no" but only asking will find out.

SELLING

Importance of Contacts

"How can I be sure my men are making the most of their contacts?"

This is a question frequently asked by sales managers, and, next to securing capable salesmen, it is the most difficult personnel problem a sales manager has to solve. It is also an extremely vital one. For no sales campaign can be effective unless the salesman is getting the maximum value from his contacts.

Any sales program can be reduced to three fundamentals: (1) arousing the prospect's interest by proving the need for the merchandise and convincing him of his ability to buy; (2) laying out a comprehensive campaign to bring the largest number of interested prospects into contact with the sales force; (3) training salesmen to turn the prospects' interest into orders.

Advertising, promotional work, contests, radio and all the other highly developed media of publicity and exploitation can be relied upon to create the buyer's interest in the merchandise, and to put him in a receptive mood to listen to the sales effort.

Competently and cooperatively done, an advertising and publicity program works smoothly in with the sales campaign, and through special price offers, quotas and the like, provides the necessary contact between the prospect and the sales-

man. Both of these phases of any sales program can be checked, accurately evaluated and controlled. It is in the final phase that the sales manager finds himself asking, "Are my men getting the most out of the contacts provided?"

It is easy enough to inform salesmen—to instruct them how to act in accordance with sound selling practice. The difficult job is to make them carry out instructions.

The problem reduces itself, on analysis, to a matter of training method.

One sales manager found his salesmen's effectiveness increased after he carried out the following program: First, he gave them a set of precise instructions in sound sales procedure, illustrating with demonstrations in the classroom. Second, he had his men try out the procedure in the field, discovering its advantages. Third, in the classroom again, he had them go through drills in the procedure, coaching them until they were letter perfect. Fourth, he followed through until he was sure the procedure had become a matter of habit.

Showmanship

The great American public is keenly "showmanship-conscious." Witness how motion pictures have played a big part in developing every person's love for drama and display. Yet from the beginning of time, smart salesmen have successfully used "showmanship" as an attention-getting, action-impelling force to sway multitudes and influence individuals.

In the language of the stage, "showmanship" is your opening "cue" for your 1941 sales "act." Build a dramatic sales presentation of your own. Keep it simple, yet effectively impressive, and sufficiently flexible in construction so as to be easily adapted to each prospect's individuality. Develop it in such a manner that prospects will have a definite part in it, and consequently much greater personal interest.

Tests made show that dramatized sales presentations are three times as effective as plain oral ones. So give your prospects "performances" that *sell!* . . . and profit accordingly. Instead of being just a "salesman," be a "showman."

Which Will Succeed

Salesman A, when he has done a particularly swell selling job, slaps himself on the back and remarks for the whole world to hear, "Well I guess I've got what it takes!"

Salesman B, under the same circumstances, sits down quietly in a corner and tries to figure out how he put it over in hope that he will be able to repeat.

Salesman A, when a prospect asks him a question he can't answer runs a bluff. He always cooks up some kind of reply, whether he knows the right answer or not.

Salesman B, under the same circumstances, admits quite frankly he does not know. He realizes it is no disgrace not to know everything.

Salesman A doesn't believe in the firm he represents or in its product, but he is convinced he is good



"LITTLE" WILLY . . . shrinks when face-to-face with hard-boiled prospects. Envis the salesman who is "big enough" to stand up and fight for what he wants, but doesn't have the courage to try it himself. Wonders why his pay check stays so small.*

enough to sell anything, whether he believes in it or not.

Salesman B believes in the firm and is genuinely enthusiastic about the product. If he felt otherwise, he would hand in his resignation.

Salesman A takes in all the territory he can get, hoping by doing a perfunctory selling job on a lot of prospects, to save himself the trouble of carefully canvassing for good ones.

Salesman B concentrates his efforts. He is satisfied with a lesser number of good prospects even if it is a longer job to search them out.

Salesman A, when he is asked to

* From Belnap and Thompson's Hobby Club Rush Plan."

report information which will require a little time and effort to secure, gives as skimpy a report as he thinks will get by.

Salesman B is prompt and accurate in complying with a similar request.

Salesman A considers what he eats and drinks is his own business, and if he doesn't bother about his health, no one else should.

Salesman B, knowing that selling requires a more than ordinary amount of health and vitality, takes good care of his body, takes regular exercise, observes regular hours, eats and drinks moderately.

Salesman A knows so much him-



"FLATFOOT" McGEE . . . depends on FOOTWORK alone to get results. Never figured that a little extra "headwork" might be easier on the "dogs" and would get him a lot of business his competitors are taking away from him every day.

self that he doesn't need any advice from the sales manager.

Salesman B takes advice wherever he can get it and welcomes it.

Salesman A is quite satisfied with the way he is doing. A better job? He doesn't need any preparation.

Salesman B, realizing that a bigger opportunity may come any minute, keeps quietly digging away. When the chance comes, he will be ready.

An Exploded Myth

A salesman who made more than \$12,000 last year, selling a special service, tells this story:

"Several years ago I entered selling with the determination that I would soon be the Number One salesman in our organization. I thought all I had to do was to make more calls than anyone else in order to become a success in short order. This 'more calls' myth was nearly my undoing.

"Soon I found I was on the verge of a nervous breakdown. And I was selling nothing to boot. I was making plenty of calls all right, but no sales! So I made a careful analysis of the situation—and promptly reversed my tactics. Instead of concentrating on number of calls, I concentrated on carefully *planning each call*.

"I studied each of my prospects thoroughly. I figured out exactly where and how our service would help him. Soon I was getting a nice volume of business every day. Inside of a year I was top man and—I'm still on top!"

Gas Furnace Venting

By ARTHUR THEOBALD

Director, Testing Laboratories,
Payne Furnace & Supply Co., Inc., Beverly Hills, Calif.

COMBUSTION is the process of rapid oxidation of burning fuels. Commercial fuels are confined to those substances composed largely of carbon and hydrogen. These fuels are in the form of solids; such as coal and wood; liquids, such as petroleum and other oils; and gases, such as manufactured, natural and liquefied petroleum. When heated to the proper temperature any of these fuels will burn by combination with the oxygen of the air. As a result of burning, the original material is changed to water vapor and carbon dioxide *if the process of combustion is complete.*

The water vapor and carbon dioxide generated are the same products contained in our exhaled breath, which are not poisonous or, in small quantity, injurious to our health. However, if we analyze the quantities produced, a small room heater burning for one hour will give off approximately the same quantity of carbon dioxide as 43 persons in the same period of time.

There is also the possibility of appliance maladjustment from either accidental causes or inexperience, in which case, there may be deficiency of air, resulting in the production of carbon monoxide. If the appliance is properly vented, the combusting products will be carried to the outer atmosphere, rather than being liberated in the

home to the inconvenience of the occupants or to impair health.

On the average, 11 gallons of water are produced for each 1,000 cu. ft. of natural gas burned and approximately three times as much for LP-Gas. This water leaves the appliance in vapor form, and if kept heated, is discharged into the atmosphere outside the room. If, however, somewhere along the vent path its temperature is allowed to drop below the "dew point" it condenses to a liquid and stops right there.

This condensate then becomes more than just water. It has picked up from the other products of combustion a varying percentage of sulphur, if present in the gas, forming a sulphurous acid. Or, in combination with carbon dioxide gas, it forms carbonic acid.

Condensate attacks iron types of pipe viciously and eats them out very readily. Nor are cement joints and cement pipe immune to its action. The evils arising from corroded pipes and faulty vents are many.

Why We Need Draft

We all know what draft is in a chimney, flue or vent, but it is interesting to see why draft is necessary. First, as you know, a free and continuous supply of air is necessary to combustion, because it is only by combination of the oxy-

gen and heated fuel that combustion and liberation of heat is accomplished. If the burned gases are not immediately removed from the combustion chamber, resistance is set up against the intake of air and incomplete combustion results. This, as explained previously, leads to formation of carbon monoxide, in addition to reducing the efficiency of the appliance. Another evil is the condensate resulting from the low temperature and incomplete combustion.

How Draft Functions

Draft as termed in a chimney, flue or vent is the force that makes it draw. The air is forced to move upward by the difference in weight between the air column inside the flue and the same amount of outside air. As hot air is lighter than cold air, the hotter the air inside the flue, the lighter it will be—thus the quicker the air will rise, and the greater draft. The length of the flue also has a bearing on the draft. The difference in weight between long columns of hot air is greater than between short columns; a long column will rise quicker and create greater draft. This motive power is very small. It is, therefore, important that we conserve it. A sharp bend or restriction will use a considerable portion of this motive power, so it is important that the path of air flow be as straight and free as possible. Another factor affecting the velocity of the draft is obstructions in the flue. These may be caused by too sharp a bend or by an improper junction of two flue pipes. The air within the flue must have as free a path for its flow as

- The material and illustrations for this article have been abstracted from a folder entitled, "Gas Appliance Venting," recently published by Payne Furnace & Supply Co., Inc., Beverly Hills, Calif.—Editor

possible. We depend on a natural law for the degree of draft instead of mechanical forcing; thus we increase efficiency by making the operation of this law as easy as possible.

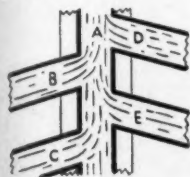
The importance of venting cannot be emphasized too much. All gas appliance manufacturers and installers recognize this fully. Quoting a very prominent gas furnace manufacturer, verbatim: "A faulty vent means a faulty furnace installation. The first problem of vital importance the gas furnace installer faces, is the designing and installing of a good vent. The proper functioning of the entire heating system depends upon the vent. *Remember it must draw.*"

It is always wise never to connect a gas appliance to a chimney that has been used for solid fuel, without first thoroughly cleaning and leaving a large trap at the base. The installation should be checked at least twice a month, for the first season, to make sure that disintegration has not caused the vent opening to be stopped. The better way is to use a gas-designed vent or to line the chimney with a gas-designed venting material. Where a chimney liner is used, it should be of the proper size and connected directly to the vent connection. Either of these latter methods is always preferable to connecting the appliance to the brick chimney.

What Is the Perfect Vent?

Some time ago questionnaires were sent to a number of prominent gas engineers asking for their specifications of the perfect gas vent and flue pipe. Answers have all been received, tabulated, and found to be surprisingly uniform. The most important specifications were that this perfect pipe must—

1. Possess high insulating qualities to prevent cooling of the gasses, and to prevent excessive surface temperatures.
2. Resist for an indefinite time the disintegrating action of condensate.
3. Be fire and weather proof.
4. Have strength and durability to withstand breakage, and be leak-proof under expansion and contraction caused by repeated heating and cooling.
5. Be light for easy installation.
6. Have leak-proof joints to prevent escape of burned gases or condensate.



WRONG—Area of A equal only to single area of either B, C, D, or E.






CORRECT—Area of A-1 equals combined areas B-1 plus $\frac{1}{2}$ C-1 plus $\frac{1}{2}$ D-1 plus $\frac{1}{2}$ E-1.

Avoid "T" connections when more than one gas furnace is vented through a common vertical stack. The 90° elbows increase the

length and offer more resistance to flow of the gases in lateral runs, and should be avoided if possible. Appliances burning dissimilar fuels should never be connected to a common vent. Round vent is more efficient than square or rectangular.

Relative capacity of various vent shapes in B.t.u. per sq. in. of area

		
8"x4"	8"x4"	4" Diam.
3670 B.t.u.	3750 B.t.u.	5000 B.t.u.

It is recommended that 1 sq. in. of vent area be provided for each 5000 B. t. u. of appliance input rating when using round vent. For example, a 100,000 B. t. u. furnace will require 20 sq. in. vent area or a 5 in. round.

Converged Vents

It is never recommended to connect a range or water heater into the same vent with furnaces, but frequently desirable to connect two or more furnaces into a vertical vent. This can be very easily done, providing they are located so that the length of the horizontal run will not be too long. In converging vents, it is recommended that a special fitting be used that will bring converged vents into the main vent at as near the same direction as possible. The area of the main vent should equal the area of the largest vent plus 50% of the area of the additional vents.

Too large a vent is not a satisfactory vent and should not exceed the full area of the converging vents.

On horizontal vent connections, it is recommended that there be a total rise of at least $\frac{1}{2}$ in. per 1 ft. run. This is the limiting factor in the length of horizontal run on floor furnace work.

In basement work, this may not be the limiting factor, as there may be considerable rise to the bottom of the floor joists, allowing a long horizontal run, in which case, the vertical vent may be the limiting factor. In all cases the height of the vertical vent should exceed the horizontal by at least 2 ft., and in some localities recommendations are that the horizontal vent should not exceed 75% of the vertical. In all cases local city ordinances should be consulted regarding both sizing, grading and general installation of vents.

There have been a number of caps developed to prevent a wind velocity striking the end of the vent from building up a velocity pressure. These are known as the "A" cap, or the double deck with wind cowling "globe" cap. The vent should terminate in a zone which is not in a pocket likely to be affected by wind pressure.

Measurements to Remember

A. Even though vent is on flat deck, if it is less than 12 ft. from eaves or 20 ft. from ridge, it must be extended 1 ft. above ridge.

B. If vent comes through pitch within 20 ft. of ridge it must extend 1 ft. above ridge.

C. If vent is between two ridges, over 12 ft. from highest eave and 20 ft. from highest ridge, it must extend 1 ft. above imaginary line drawn within the

two ridges.

D. Cross-over cannot be less than 30° from horizontal and must extend 1 ft. above ridge within 20 ft.

E. A vent run in a dummy chimney must extend 1 ft. above the chimney. In the event the chimney is lower than the ridge it must meet all other requirements.

F. If vent is in flat portion of the roof and not more than 12 ft. from eaves it must terminate 1 ft. above an imaginary line drawn from the ridge to a point where it would intersect the flat roof line 20 ft. from eaves, unless an imaginary line drawn from ridge to fire wall would be higher. In this case the vent must extend 1 ft. above this imaginary line.

G. No vent should be run within 10 ft. of property line, and if within 12 ft. of adjacent building it should be extended 1 ft. above the adjacent building.

Draft Hoods

In spite of all the precautions which we may take, circumstances beyond the control of the installer may cause the vent to become blocked. New building construction or the growth of trees in the vicinity may at times result in down-drafts. On the other hand, the vent may be so well installed that without some provision for a check draft, the heat liberated by combustion would be drawn up the vent rather than doing the work for which it is intended. To counteract these possibilities, vents are never connected directly to the flue passages of a gas appliance, but rather to a draft hood attached to the appliance outlet.

They Skate and Dance on

Iceless Ice

"ICELESS ICE" is the common descriptive term for a product that is becoming widely used on skating rinks, although it is not ice at all, but a metallic preparation secretly compounded by John Markman and made into a molten liquid, suitable for pouring, through the application of Shell industrial gas (liquefied petroleum gas), whose quick, intense heat has been found best suited for the melting action.

This "Mark ice," as its inventor calls it, carrying a temperature as high as 78°, feeling like ice, looking like ice, and offering all the

crisp smoothness of ice to skaters, is often dubbed "hot ice," and its character curiously questioned.

This new substitute for ice is becoming increasingly popular among indoor rink owners, especially in leading hotels where, after the skating revues are over, the rink may be quickly swept, a new coat of "ice" sprayed over the surface, which almost immediately hardens, and dinner guests may spend the remainder of the evening dancing. It is possible to dance after the skating even without any resurfacing.

The rink in accompanying

The technicalities of "iceless ice" were temporarily forgotten when the "Naughty But Ice" skating revue made its appearance on the rink in the Persian Room of the Sir Francis Drake Hotel, San Francisco.



photos is that of the Persian Room of the Sir Francis Drake hotel, San Francisco, which has dimensions of 19 by 30 feet. Three and a half tons of this imitation ice are required to cover it to a depth of three-quarters of an inch. The same area, flooded with water to the same depth, and frozen, would weigh but 2038 pounds. The largest installation so far made has been an area of 2000 square feet, laid in one night.*

Tests showed liquefied gas the best fuel to use from the standpoint of safety, economy and speed.

*Photos and facts for the accompanying article through the courtesy of Shell Progress magazine and the Sir Francis Drake hotel, San Francisco.



Heated by LP-Gas, the "hot ice" is poured on the rink floor by John Markman (left), its inventor, in liquid form. A coating three-quarters of an inch thick cools and is ready for use in a few hours.

Newly Completed Storage Tank To Supply Louisiana Parish

The Butane Gas Co., Morgan City, La., recently completed a large-capacity storage tank, pump house, and warehouse built on a 100 x 194 ft. lot in the new subdivision north of Berwick, La. The reservoir has a capacity large enough to supply the entire parish of St. Mary with butane even during unusually cold weather. S. P. Rogers, Berwick sales manager, stated that two trucks will operate from this plant.

Emeldean Naquin, office manager of the company's headquarters in Morgan City, announced that C. C. Clarke, butane gas engineer of Baton Rouge, La., recently joined the company. Agnes Mayon will assist him as secretary.

Among other appliances the company displays ranges, heaters, automatic water heaters, and floor furnaces in its showrooms.



Mohave Butane Gas Service Adds to Office Building

The Mohave Butane Gas Service, Kingman, Ariz., recently completed remodeling of its home office building, according to Merlin Davis, manager.

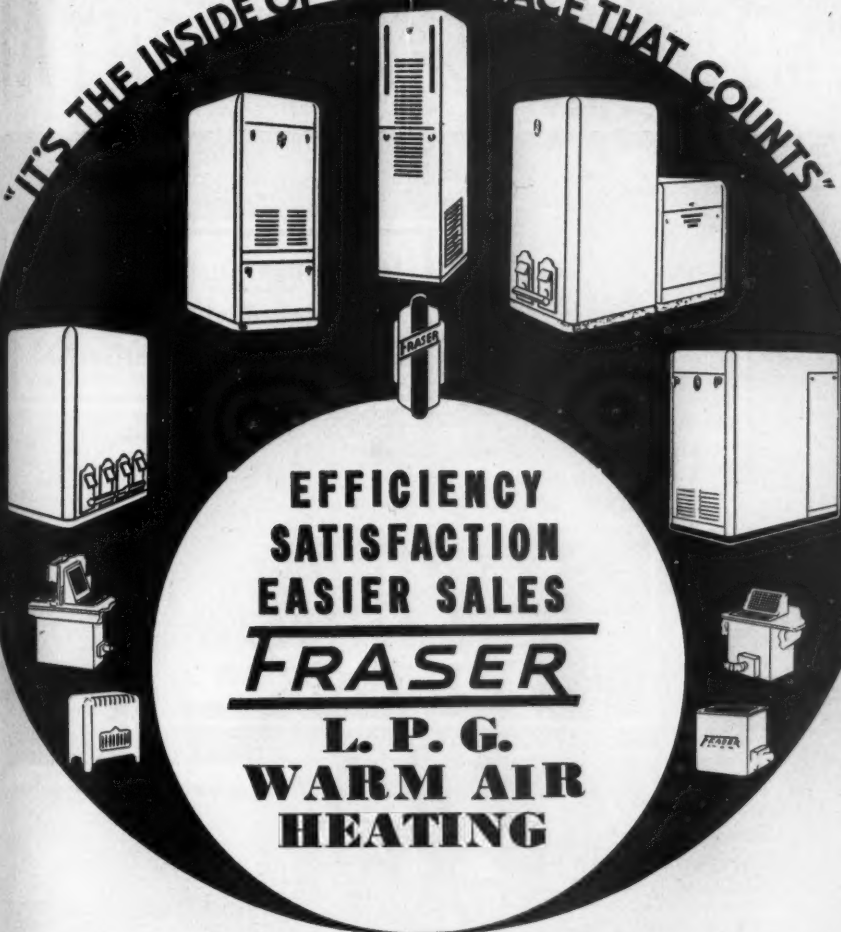
An office was added to the building and the moving of the old office from the main part of the building has resulted in more room for the display of gas appliances. The garage was also enlarged to accommodate the new 1000-gal. delivery truck recently purchased by the company.



Philgas Manager Transferred

T. Frank Thompson, for the last two and a half years manager for the Philgas Co. in Ft. Wayne, Ind., was transferred Dec. 15 to Oshkosh, Wis., and will be succeeded by H. O. Pratt, formerly of Massachusetts.

"IT'S THE INSIDE OF THE FURNACE THAT COUNTS"



Fraser L.P.G. Warm Air Heaters combine the finest materials, advanced engineering principles and modern, eye-appealing cabinets. They include circulating consoles, cabinet units, Tuck-a-way, Double Wall and Floor Furnaces, and winter air conditioning systems.

Their simplified assembly, wired controls and other exclusive features assure time saving installation. Pre-testing with LPG fuel before shipment guarantees maximum performance . . . a minimum of service calls.

Fraser Furnace Co. specializes exclusively in warm air heating equipment. Already one of the largest producers, manufacturing space was recently doubled in order to keep pace with the growing, nation-wide demand for these finer heating units.

Write today for illustrated data and specifications sheets.

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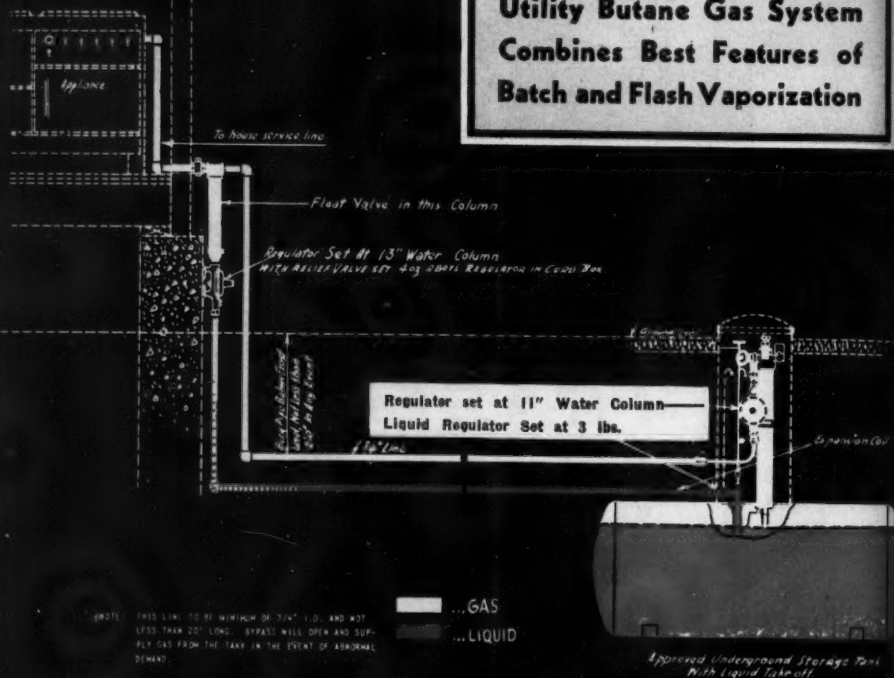
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ALWAYS

Utility Butane Gas System Combines Best Features of Batch and Flash Vaporization



Improved performance is due to the famous J & S automatic pressure-differential vaporizer now used successfully throughout the industrial field. This feature causes gas to be automatically taken from the top of the storage tank to provide for any temporary overload placed on the flash side of the system, thus combining the advantages of both Flash and Batch vaporization methods

WEATHER BUTANE SYSTEM

Eliminates Frozen Regulators, Loss of Tank Pressure and Condensation!

Utility

BUTANE GAS SYSTEM

● Many claims have been made—but here is the one butane gas system that can be fully depended on to provide complete satisfaction, service and profit!

New advantages have been achieved through our successful method of combining the best features of Batch and Flash vaporization—a development which has eliminated cold weather difficulties, such as frozen regulators, loss of tank pressure, condensation in house lines, etc.

SERVICE CALLS REDUCED

TO A MINIMUM — because the Utility Butane System maintains a uniform butane-propane ratio from start to finish of each tank fill. This provides a gas of uniform B.T.U. content and eliminates the necessity of adjusting appliance burners to burn gas of varying B.T.U. content.

Remember, the only bargain in the butane industry is—ONE THAT MEANS MORE PROFIT TO YOU—a system that will work all the time. The low cost of the Utility Butane System will be a pleasant surprise.

BUTANE EQUIPMENT COMPANY, INC.

Manufacturers

PHONE 3-2266

Dallas, Texas

3300 S. LAMAR

Butane Outpoints Fuel Oil In Midwest Enameling Plant

A DEFINITE improvement in furnace life, simplicity in operation, a more uniform heat, cleanliness not obtainable from the fuel formerly used and substantial economies have resulted from the introduction of butane gas in the new finishing ovens and heat treating department in the enameling plant of The Maytag Co., Newton, Iowa.

A description of the process follows:



Fig. 1. The vaporizer unit.*

● The Maytag Technical Staff, enthused over the performance of butane gas in The Maytag Co.'s enameling plant, has provided the facts in the accompanying article. As another application of liquefied petroleum gas which has reduced manufacturing costs and increased efficiency, it will be of interest to the LP-Gas industry.—Editor.

The butane gas, received in 10,000-gal. tank cars, under pressure, is unloaded into a storage tank. This is accomplished by the use of two large hose connections between the car and storage tank, the liquid being forced from the car by air. The tank has a net capacity of 25,500 gals., and is completely equipped with safety devices. The gas, as a liquid, is transferred from the tank to a vaporizer house, where it is vaporized by the vaporizing unit (Fig. 1). Here the liquid is converted into a gas with low pressure steam, and sent to the oven equipment under $2\frac{1}{2}$ lbs. pressure. The vaporizer equipment is entirely automatic in its operation and is completely protected by the necessary safety features.

Before entering the burners the gas is measured through a meter and further reduced to 10 in. water pressure through a regulator.

Fig. 2 shows a complete view of the burner unit and control panels. The four burners each have a ca-

FLORENCE HEADS YOU STRAIGHT INTO YOUR BIGGEST LPG YEAR!



You're set for a boom year when you're selling Florence in '41! Because the big Florence line of modern LPG Ranges gives you the right answer to every customer who comes into your showroom . . . whether that customer wants a luxurious range like the one shown here, or a moderately priced range that's top-ranking value!

Remember, most people will judge your LPG service by the *range*. That's where Florence serves *you* every day, by delivering convenient, dependable, enjoyable cooking to your customers. That's what builds those year-in, year-out payloads in LPG service for you. *Mail the coupon now!*

FLORENCE STOVE COMPANY

General Offices and Plant, Gardner, Mass.; Western Offices and Plant, Kankakee, Ill.; Sales Offices: 1458 Merchandise Mart, Chicago; 45 E. 17th Street, New York; 53 Alabama Street, S.W., Atlanta; 301 N. Market Street, Dallas; and 2730 16th Street, San Francisco.



FLORENCE STOVE COMPANY

Please send me the Florence Gas Range Catalog, prices, and full information about the liberal Florence Promotion Plan for Dealers.

Name

Address

FLORENCE

Gas Ranges

FOR LIQUEFIED PETROLEUM GAS

JANUARY-1941

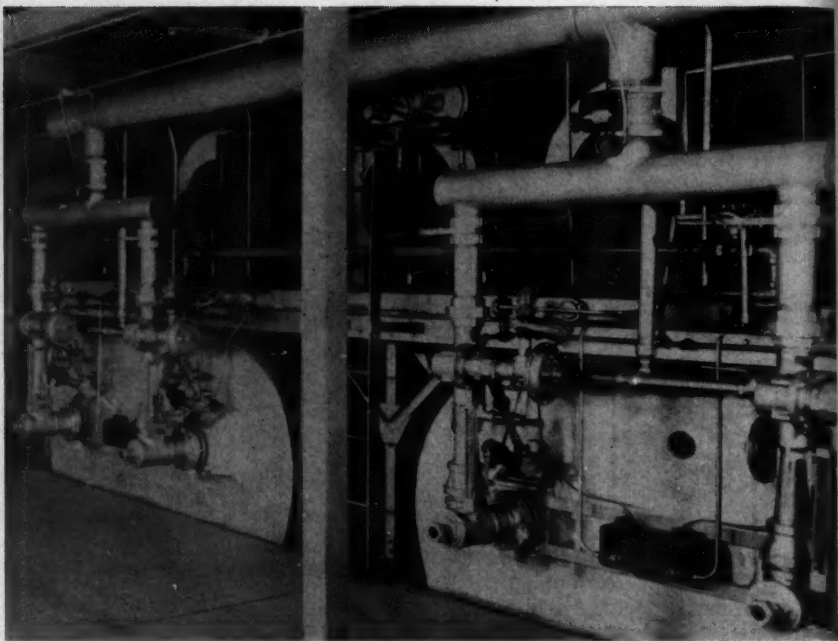


Fig. 2. The burner unit and control panels.*

capacity of 2,000,000 B.t.u. per hour, or a total of 8,000,000 B.t.u.—four times the operating load. This has given exceptionally sensitive control and made for faster come-up time, and has benefited greatly the control on shut-downs at noon and night.

The outstanding feature of the system is the direct firing of the gas, particularly on the top coat, resulting of course in high efficiency and closer control. The burners are equipped with the latest automatic lighting and safety control equipment, requiring very little supervision. These burners are supplying heat to one prime oven 14 ft., 6 in. wide by 200 ft. long; a

final coat oven 7 ft., 3 in. wide by 200 ft. long, and one dry-off oven 4 ft. wide and 71 ft. long. The dry-off oven is heated by the exhaust air from both the primer and final coat ovens. The temperatures maintained in these ovens are 315°F. in the primer and 300°F. in the final coat, the time being 30 minutes for each baking process.

This unit operates only for baking the synthetic enamel on washing machines and has a capacity of 1300 machines in eight hours.

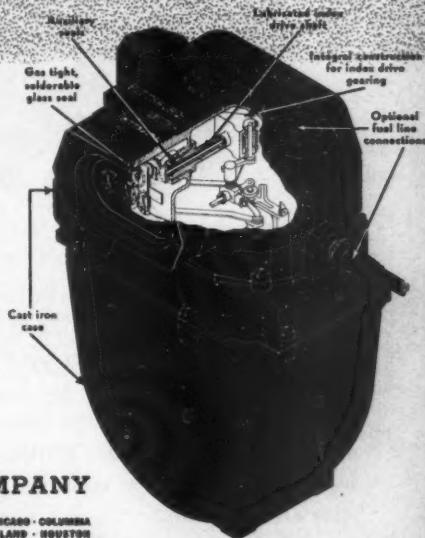
The use of butane gas has been extended to our heat treating department and serves our high speed fuel furnaces, maintaining temperatures of 2300°F., and our normal-



*Living up to its name
and heritage*

EMCO Special BUTANE-PROPANE VAPOR METER

The name EMCO has been well and favorably known in the manufactured and natural gas industry for over 50 years as identifying the best in measurement and control equipment. The EMCO name is now coming to a similar position in the LPG industry. An outstanding product for this field is the EMCO Special Butane-Propane Meter. Some of its features are pointed out in the isometric drawing at the right. It provides complete safety, combined with typical EMCO ruggedness and accuracy. Write for Bulletin 1063.



PITTSBURGH EQUITABLE METER COMPANY

MERCO NORDSTROM VALVE CO.

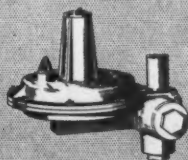
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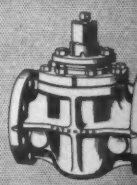
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Large Capacity
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ROTCYCLE Meter
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"Made To Order" for Butane and Propane Handling

MOYNO L.P.G. PUMPS



Rotor and stator mechanism of the Moyno L.P.G. Pump shown at left, is the patented secret of its efficient, trouble-free performance. Note minimum of other working parts.

WHEREVER there's a butane or propane handling job to do, a Moyno L. P. G. Pump saves you time and money. From tank car to storage tank . . . from delivery truck to consumer containers you get gentle, uniform, metered flow at constant pressure and with velocities not over 22 to 23 feet per second. Displacement is so positive and suction so powerful

that tank cars can be pumped entirely dry. Turbulence is reduced to a minimum . . . vapor locking is eliminated. Investigate this new, safe, economical and trouble-free way of handling *your* pumping jobs today as hundreds of Moyno users are now doing. Write for descriptive folder and prices. Specify whether you handle butane or propane or both. *Address Dept. 1.*

ROBBINS & MYERS, Inc.

MOYNO PUMP DIVISION



SPRINGFIELD, OHIO

izing and carburizing furnaces, in each case having replaced fuel oil.

In the heat treating department we use butane for treating tools and parts of the washers. In this case we have found a direct saving of 25% over the use of oil in the same furnaces, and have the added advantage of longer furnace life, uniformity of product and cleanliness of operation.

As this is a new line of equipment for us, we do not yet have any comparison of its efficiency

with other types of fuels, except as set out above. However, we are firing direct, meaning that combustion gases are going into the oven for the top coat. This is not done with oil, or non-uniform gases, on high class white finishes such as used on our washers. We are able, by the use of gas, to save 25 to 30 tons of weight on our roof in burner equipment over that of oil.

Photos through courtesy of Phillips Petroleum Co. (Fig. 1) and R. C. Mahon Co. (Fig. 2).

Dramatize Your Sales Approach

By JOHN D. MUELLER

PUT some romance into the sales assault you make upon a potential user of LP-Gas! It has proven a builder of sales for Dallas Butane Gas Appliance Co. in Dallas, Texas, and headed by John G. Clements and James E. O. White.

The sort of romance Mr. Clements suggested in his discussion of his company did not involve, of course, the story book type. Romance as he uses it, is dramatizing liquefied petroleum gas so that a prospect is enabled to visualize his home complete and replete with modernity by use of this equipment.

That this manner of sales effort has produced results is indicated by the growth of the company since its organization a year ago. This has been reflected in recent weeks by the necessity for placing a second distribution tank truck into service to care for increased business. Operations are wholly in-

scribed within a radius of 20 miles from Dallas.

There is no magic carpet upon which the butane equipment seller may seat himself, breathe some mysterious word and sail to a signed agreement, Mr. Clements insists. The chief secret of selling systems and accessories is getting out and selling them, day in and day out, week after week. It is the old story of hard work, and then more of it.

The butane systems salesman, however, has certain highly valuable ground-work already laid on his road to a sale. This has been done by the natural gas companies. People know definitely and certainly that natural gas does all of the things said of it. There are few of them, indeed, who do not deeply

hope and plan to have gas in their homes.

It is from this fact that the sales efforts of Mr. Clements and his associates spring. If it is an acceptable premise that men and women know what natural gas is and will do, it is no less one that butane is essentially, natural gas.

Here, then, is where lies the romance, as Mr. Clements terms it, of selling these systems.

"What we strive to do," Mr. Clements explains, "is to cause the prospect to visualize the home provided with natural gas. Everyone wants it. Here it is. We sell the system as a source of something they know all about—natural gas. They are enabled to envisage their home, provided with every facility, no matter how remote they may be at the time from a gas main.

Sell the Idea First

"We don't attempt to sell equipment to go with the system in this preliminary effort. Every energy is bent to driving home the message that here is a natural gas, actually and economically available right now, with no waiting.

"Once we have sold the system, the accessory items will fall into line.

"It is our experience that it is a mistake to sell or install used equipment, such as a range, if it possibly can be avoided. You have striven to create the impression that here is natural gas, in fact; and a used range may be a great disillusionment to its user. We will, of course, install one if it cannot be avoided; but it is in our experience,

bad policy to seek to make used equipment an aid or accessory to a sale. After all, every range is not entirely suited to use with butane. But there are ranges which will give the results you have assured. For that reason we always endeavor to install one we know will be satisfactory."

Small Home Owners Like Butane

Dallas Butane Gas Appliance Co., has been working ceaselessly among the multitude of new small homes which is being built in and around Dallas under FHA financing. These are spreading out far and wide, and virtually every buyer or builder is one avidly interested in what LP-Gas will accomplish. From ordinary household uses, interest is reaching out to other applications, Mr. Clements says. The field is so large and the opportunities so varied in the liquefied petroleum gas industry that if a man has any imagination at all, and the ability to create visions of comfort and conveniences in the homes of his prospects, it will be found quickly that romance well may be injected into selling LP-Gas systems!



Blythe, Calif. Is Considering Butane for Street Equipment

The city council of Blythe, Calif., is considering the installation of butane for fuel in a new sprinkler truck. This would be a test job and if successful would be followed by other automotive conversions.

K. C. Jones, manager of the Blythe Gas Co., offered to make the trial installation free of cost to the city.

TOP PERFORMANCE

IN L.P.G. SPACE HEATING

Demands MODERN VENTING

Developed in the famous PAYNE Testing Laboratory, the PAYNE "A" Vent is our answer to the demand of gas engineers for a perfected vent. You owe it to your reputation to install PAYNE "A" Vent on every space heating job.

ADVANTAGES OF PAYNE "A" VENT

1 FAST HEATING: Aluminum inner-stack heats faster than any other common metal. Creates proper draft conditions rapidly.

2 FULLY INSULATED: Solid insulating material between aluminum inner-stack and galvanized outer pipe keeps virtually all the heat inside.

3 FIRESAFE, WEATHERPROOF: Insulation practically eliminates

temperature transfer through vent. No condensation problem.

4 ACID RESISTANT: Aluminum inner-stack is not affected by products of combustion.

5 STRONG, NON-BREAKABLE, LEAK-PROOF: Joints are airtight.

6 LIGHT, EASILY INSTALLED.

Free AUTHORITATIVE BOOKLET

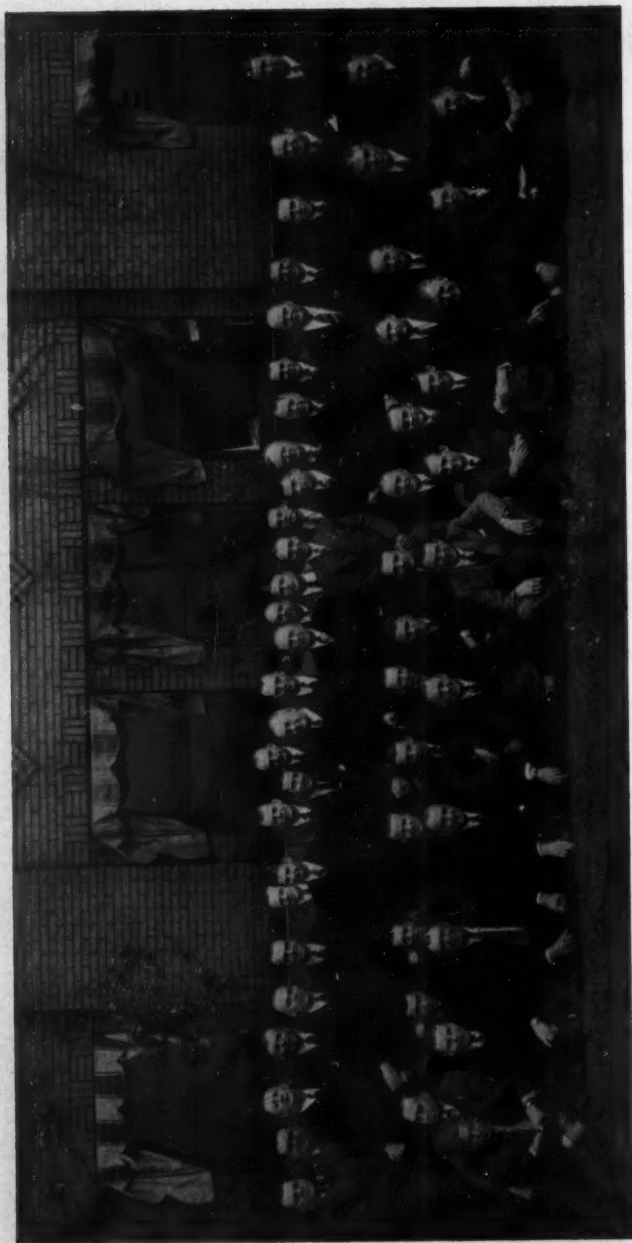
Just off the press, *Gas Appliance Venting* is written in plain language and illustrated generously. Sure to clear up many questions you may have on venting. Write us for your copy.

***Payne* "A" VENT**
A PAYNEHEAT ACCESSORY

Payne Furnace & Supply Co., Inc.
BEVERLY HILLS, CALIFORNIA

JANUARY-1941





Forty-four representatives of the Skelgas Division of the Skelly Oil Co., Kansas City, Mo., who attended the first "All Bottled Gas" school conducted by Servel, Inc., Evansville, Ind. The course consists of a thorough study of the theories and principles of refrigeration, refrigerator design and construction, laboratory and production technique, engineering and production testing, features of the 1941 Servel Electrolux models, and approved installation procedure. The group includes state supervisors and district managers of the Skelgas organization from the Wisconsin, Michigan, Illinois and Indiana territories, and branch managers of Skelgas in Minneapolis, Denver, Kansas City, Omaha, St. Louis and Des Moines.

EXCLUSIVE!

**THE ONLY LPG range that AUTOMATICALLY
turns off its own gas and keeps right on cooking**



DUTCH OVEN RANGES

STEP OUT OF COMPETITION! Sell ranges with unusual sales abilities. Creates immediate consumer acceptance. Offers you greater % plus \$ profits.

Here it is! **DUTCH OVEN LPG retained heat ranges.** These ranges cook tastier Colonial Dutch Oven meals—the modern way.

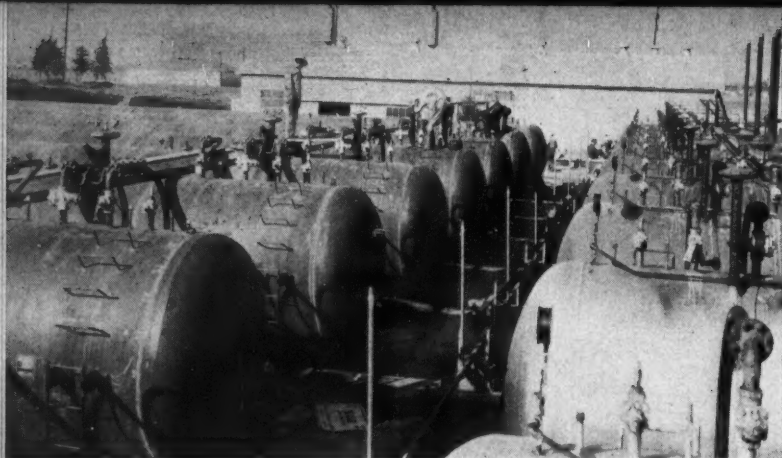
Women will marvel at the matchless performance of Dutch Oven LPG retained heat ranges—uses only ten minutes of gas for every hour's cooking. Reduces food shrinkage; cooks foods in their own natural juices; preserves vitamins and other healthful food properties. Too, Dutch Oven LPG ranges are the **ONLY** ranges in the world that **AUTOMATICALLY** turn off their own gas and keep right on cooking—with retained heat.

WRITE TODAY for information regarding Dutch Oven LPG exclusive dealer franchise and proven merchandising helps that will add % plus \$ profits to your range sales.

Approved by A.G.A. and GOOD HOUSEKEEPING INSTITUTE

See the new 1941 Dutch Oven ranges at the L.P.G.A. Eastern District Meeting,
January 16 and 17 at the Park Central Hotel, New York

GLOBE AMERICAN CORP., KOKOMO, IND.



The 22 butane tanks as final installation work was in progress

Long Beach Standby Completed

THE 502,089-gal. butane-air standby plant for Long Beach, Calif., was completed the middle of December, according to schedule. Work was started in July.

Constructed to augment the city's natural gas supply at times of peak loads, the plant has a capacity of 500,000 cu. ft. per hour of a mixture of liquefied petroleum gas vapors and air, with such specific gravity that the mixture will readily combine with, or substitute for, 1080 B.t.u. natural gas which is delivered into the city's distribution system. The butane will be fed directly into the mains.

The plant, occupying about two acres of ground, consists of 22 horizontal, welded tanks. Each one is 108 ft., 10 in. long, with an inside diameter of 76 in., weighs 75,000 lbs., and holds 22,722 gals of butane. The shells are of $\frac{3}{4}$ -in. fire box steel; the center course is 9 ft. long and the other 12 courses

in each one are 8 ft. each. The heads are semi-elliptical. The tanks are built to carry a working pressure of 215 lbs.

The total butane capacity of the 22 tanks is equivalent to 32,000,000 cu. ft. of natural gas storage, or three times the capacity of the present Long Beach natural gas holder.

The Long Beach gas department serves approximately 50,000 consumers with an annual send-out of more than 3,500,000,000 cu. ft.

The contract price for the standby was \$218,760. The Standard Oil Co. of California will supply the butane, guaranteeing a maximum of 50,000 gals. per day on call.

Harold W. Wickstrom, consulting engineer of Los Angeles, prepared the plans and specifications for the plant and supervised its installation. The entire project was handled by W. H. Partridge, gas superintendent for Long Beach.

Model "R"



BUTANE *Regulating* UNIT

Last Word in Butane Carburetion Equipment

Simple, efficient and rugged in construction the Ensign Model "R" Butane Regulating Unit, companion to the widely accepted Ensign 700 Series equipment, incorporates in one unit, for compact installations, all the features important to dependable Butane carburetion equipment.

Model "R's" in every type of service are turning in record performances.

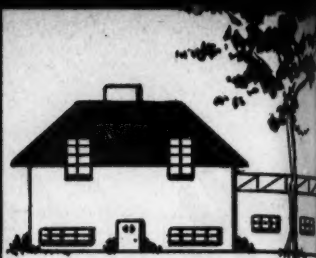
Supplementing the 700 Series the "R" has a very definite place for mobile application or wherever installation space is limited. Used in conjunction with Ensign Butane carburetors or combination gas and Butane carburetors, truck and tractor operators are discovering a new kind of profit through the use of Butane correctly vaporized and carbureted.

The Ensign dealer organization and factory engineers will gladly assist you with your operating and installation problems. Write for complete information.

ENSIGN

CARBURETOR CO., LTD.

HUNTINGTON PARK, CALIF. • DALLAS, TEXAS • CHICAGO, ILL.



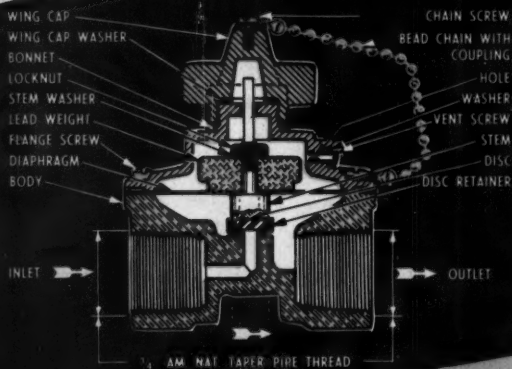
ADDED PROTECTION FOR YOUR L. P. G. INSTALLATION

Specify the Automatic Cut-Off Valve for systems using a normal gas pressure of from 10 to 12 inches water column. It closes automatically when the gas pressure drops to 3 or 4 inches water column.

Stops — won't start till set by hand
— It remains closed until reset by hand after the gas pressure has been re-established.

For added safety, the valve will close even though pressure fails during the shortest period of time.

This valve also functions as an access flow check valve when a connection is broken between the valve and appliance.



REGO

**AUTOMATIC
CUT-OFF VALVE**

USE
REGO

AUTOMATIC CUT-OFF VALVE

**Prevents Accidents Caused by
Temporary Interruption of Fuel Supply**

For positive protection to all installations — domestic or industrial — equip with Rego Automatic Cut-Off Valves.

This valve is designed to prevent those accidents caused by the escape of gas into a building due to temporary interruption of gas flow to the appliance. Should the pressure of the gas delivered into the building drop from any

cause, this device automatically cuts off. One of these valves installed at each gas appliance in service, represents real insurance against fire, explosion and other accidents.

Remember, the Rego. Cut-Off Valve is automatic and shuts off as soon as the gas pressure drops below the required pressure. *It will not open until reset by hand.*

For Real Safety Specify Rego Automatic Cut-Off Valves.



Listed and Approved by
Underwriters' Laboratories



The **BASTIAN-BLESSING** *Co.*

258 E. Ontario St.

Chicago, Ill.

Pioneers in equipment for using and controlling high pressure gases.

Beaumont Residential Area Will Be Served Butane

To serve a north side area of Beaumont, Texas, that is beyond the city gas mains of local natural gas companies, the Winton Automatic Gas Co. was given a city commission permit on Nov. 26 to install a butane bulk plant.

L. E. Lanier, owner of the company, has installed an underground tank and will immediately begin serving consumers in the outskirts of the city.

Nacogdoches Appliance Co. Opens New Headquarters

The Nacogdoches Appliance Co., Nacogdoches, Texas, recently moved into new headquarters where they have an enlarged display room, pictured on this page, for offering a choice of appliances to customers.

The company is operated by Joe Gilbert and his wife, who sell, install and service Hydro-Gas Systems and gas appliances. They entered the

liquefied petroleum gas industry about two years ago and now operate two tank trucks, fueling approximately 300 gas system installations.

Mr. Gilbert states that he meets competition from persons and firms offering inferior equipment at extremely low prices by extolling the advantages of fine equipment at higher prices. He further states that people buy good equipment if you properly present to them the attendant advantages to the user.

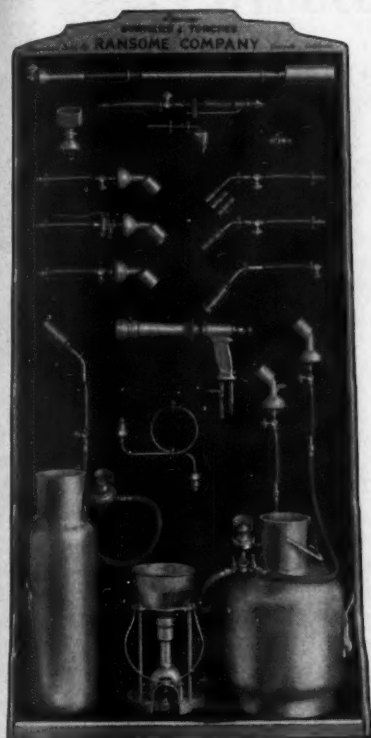
Butane Tank Shipment Received By H. H. Weimhold and Son

H. H. Weimhold and Son, of Vega, Tex., recently received a truck load of butane systems from the Dallas Tank & Welding Co., Inc., of Dallas. The Vega firm keeps a large supply of tanks on hand to save time in supplying customers.

E. W. Tadlock, also of Vega, who services the Weimhold concern with butane, has just replaced his transport with a new 3-ton trailer.



An appeal to women's tastes features this view of the showroom of the Nacogdoches Appliance Co., Nacogdoches, Texas.



Announcing

THE APPOINTMENT OF THE

BASTIAN-BLESSING CO.

240 EAST ONTARIO STREET • CHICAGO

AS NATIONAL
DISTRIBUTOR

for

**RANSOME
TORCHES**

Inquiries from all states except California, Washington, Oregon, Idaho, Nevada and Arizona should be sent directly to this company in Chicago. Ransome Company will continue direct sales in the states mentioned above.

RANSOME COMPANY

Designing and Constructing Engineers

4030 HOLLIS STREET • OAKLAND • CALIFORNIA

Ransome

Sell the School Board First!

THE rural school board member is an incredible trader—down in Texas at least—and the LP-Gas man who enters upon the job of selling him a system for use in a school can take for granted he will be kept on the mental jump all the way lest he comes out second best. Selling them is an undertaking calling for infinite patience and persistence.

This is what C. M. Russey, of Southwest Stove & Supply Co., Dallas, Texas, says about school boards based on his personal experience and that of the others who comprise his sales staff of nine. Mr. Russey had just completed installation of equipment in the Watson, Texas, school, providing for four classrooms and the library, when the subject was discussed.

High Advertising Value

On the other hand, the school definitely does offer opportunity for excellent advertising for liquefied petroleum gas. The school, as has been its history, is a place where the entire neighborhood gathers. The heating system of the school will come under the observation of virtually every man, woman and child in the district. Its comforts and its success will be known to them all. It will be a proving ground available to the most skeptical.

Here the school definitely has a value to the man seeking to sell LP-Gas in a rural area, Mr. Russey says. It provides a demonstration in

which the majority will ultimately participate.

The Southwest Stove and Supply Co. has found that in the main the basis of sales of LP-Gas equipment will be founded upon the experiences of others. Word-of-mouth advertising by persons using the equipment will do far more than a salesman might hope to accomplish in any other manner.

Demonstrations Good, Too

When business shows a tendency to lag, Mr. Russey's company sponsors demonstrations in the homes of users. Women of the neighborhood are invited in to see the equipment in use. This method of advertising has been found productive of excellent results in creating a desire to possess the equipment, Mr. Russey says.

Newspaper advertising is used by the company, but is largely limited to keeping the company name before the public. There is no way to supplant the efforts of the salesman out in the field where the need for and potential use of equipment exists.

The fact that some LP-Gas dealers have "cut corners" in making system installations, with resultant failure of adequate operation, need not deter the legitimate operator, Mr. Russey avers. If jobs are well done they will be talked of no less than those which have been done poorly, he believes; and there will be proof that there is more than mere price involved in a job.



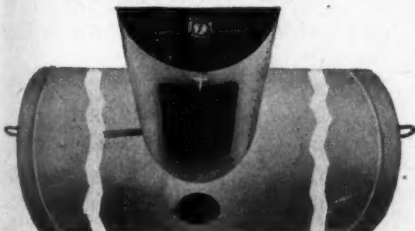
Let these Gauges Prove Their Efficiency on Your L. P. Gas Systems

Rochester Criterion Gauges are especially designed and built for use in liquefied petroleum fuels and incorporate the famous Rochester magnetic principle of operation which assures greater accuracy and positive leak-proof construction. Listed as standard by Underwriters' Laboratories. Distributed by manufacturers of L. P. Gas Systems.

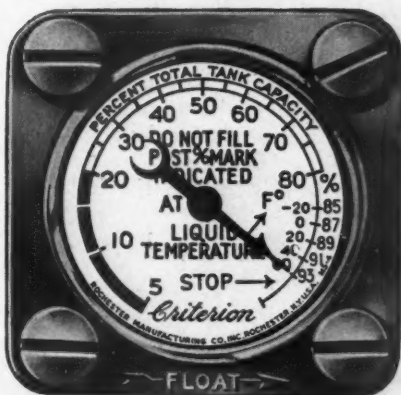
WRITE TODAY for complete information.

ROCHESTER MFG. CO., INC.
17 Rockwood St., Rochester, N. Y.

(Below) Rochester Criterion Gauge as installed in underground system of the DALLAS TANK & WELDING CO., DALLAS, TEXAS.



MANUFACTURERS! Specify Criterion Gauges on Your L. P. Gas Systems.



- Permanent magnet pointer control —no packing glands.
- No opening through gauge head into tank.
- No fuel waste when in use.
- No keys or wrench required when reading.
- Easy-to-read dial tells ACCURATELY at-a-glance the amount of fuel in the tank in terms of percentage of total capacity.
- Red area on left side of scale warns user when fuel needs replenishing.

ROCHESTER *Criterion* GAUGES

Sales That Never Kick Back

THE soundest fundamental upon which to build a retail business is customer satisfaction—the positive determination by the seller that the purchaser of an article knows how to use it in a manner to obtain its highest efficiency in service and to feel that he or she has gotten full value for the money spent. With such done, a business man need not worry about future prospects or future sales, for enthusiastic users will develop those for him. Add to this some judicious advertising and the influence of personal contact through persistent solicitation and you have a successful business!

Such is the belief of John C. Wabeke, dealer in liquefied petroleum gas and appliances in Fremont, Mich., and he seems to have proven his claim.

Sales Steadily Increased

Mr. Wabeke started to sell bottled gas ranges in the latter part of 1935. His sales the first year amounted to just three ranges. The next year he sold nine. The third year his sales jumped to 35. In 1939 they increased to 74. So far this year, up to Aug. 15, he has sold 44. The best part is that, during the past two years, more than 90% of the sales have been for cash.

Mr. Wabeke's promotional program includes the use of news-

By **HARRY L. SPOONER**

paper advertising, direct mail, window displays, floor displays, user commissions and occasional premiums.

Newspaper space is used in the *Fremont Times-Indicator* each week from about March 1 to July 1. This paper covers the city of Fremont, with 2700 population, and the rural population of all of Newaygo county and portions of Oceana and Muskegon counties. In this advertising, Mr. Wabeke cooperates with the manufacturer. The latter furnishes mats and provides a schedule when ads should appear. The manufacturer also cooperates in the cost of advertising, making an allowance of 7½% for ranges and 7½% for gas, or a total of 15%. This coverage has been of considerable value in promoting the sale of ranges.

Manufacturer Cooperates

In the matter of direct mail, the manufacturer also cooperates by furnishing broadsides bearing Mr. Wabeke's name and by doing the mailing. Mr. Wabeke furnishes the mailing list and pays the postage bill. This is done once a year, in the spring, and 3000 homes are covered by the mailing.

Window displays and floor displays are used constantly. The

IN '41

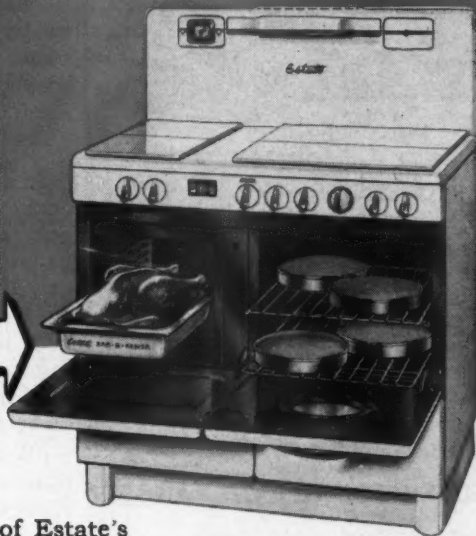
SELL THE ONE THAT'S DIFFERENT

ONLY ESTATE HAS IT!

New! Sensational **BAR-B-KEWER**

Broils or barbecues whole chickens, turkeys, hams, rib roasts, legs of lamb and other tender joints by the modern, low-temperature method recommended by the National Live Stock & Meat Board.

**ADDS AN EXTRA OVEN
TO THE RANGE**



HOLD EVERYTHING

until you get the details of Estate's sensational Bar-B-Kewer. Offers women a wonderful new way to cook—puts you miles ahead of competition. Featured in big national advertising campaign in *Life*, *Good Housekeeping*, *Woman's Home Companion*, *Better Homes & Gardens*.

Wire or write today for the big profit facts on the new Estate with the exclusive Bar-B-Kewer. The Estate Stove Company, Dept. BPN1, Hamilton, Ohio

ESTATE *Ranges*

For all types of liquefied petroleum gas (for SKELGAS exclusively in the Middle West)

THERE'S A WEDGEWOOD TO FIT EVERY NEED AND PURSE



A Wide Selection of WEDGEWOOD L. P. G. RANGES

- 5 Kitchen Heater Models
- 3 Circulating Heater Models
- 10 Standard Cooking Models

WEDGEWOOD

THE MODERN RANGE

James Graham Mfg. Co.

Los Angeles, San Francisco, Newark,
California • Portland, Oregon

salesroom is rather small but the location in the heart of the business section of the city where traffic is heavy is an advantage. Seven models of ranges are kept on the floor all the time, varying in price from \$100, installed, to \$154. Several of these are hooked up for demonstrating purposes. With the large variety of models, an attractive and impressive display is possible. The window display space is small but one range is on display constantly. With several models in stock all the time, frequent change of models in window displays is practiced.

Special Models Sell Best

In addition to the regular models, each year the manufacturer puts out a "special" that has some gadgets or features not standard on the regular models. These specials usually run about \$100, plus installation charges, amounting to about \$19.75. These specials are the best sellers of all the models.

"We have, at times, given commissions to users," says Mr. Wabeke. "The manufacturer mailed out cards at one time to our list of users and secured names of prospects from them. The cards contained a coupon good for \$5 in fuel for each prospect furnished that eventuated in a sale. Some of the users secured as much as \$15 worth of fuel in this way. This has been a profitable method but one that requires great care from the fact that we may have already contacted the prospect ourselves. This method, however, has pro-

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duced some sales that likely we would not have secured in any other way.

"The only inducement we make to purchasers of ranges, outside of high quality, is occasionally a cylinder of gas as a premium on a cash sale. We have not had to give many of these.

"In spite of all the merits of other forms of promotion, there is nothing like personal solicitation to sell ranges. Newspaper advertising and direct mail make excellent introductions of us and our business but they are mere introductions. They make the way easier when we call because prospective customers have already learned something about our ranges and what they will do. We intensively follow up all good prospects we get by other methods and then use the remainder of our time digging up more prospects by personal calls. Other methods secure prospects but all sales are clinched by personal contacts. I, personally, close every sale.

Tell the Truth When Selling

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"When we go out to sell, we tell the truth about our products. We know that if we have an article that we ourselves believe in, we can sell it, and our experience has proved this belief. We have an installation in our own home and can point to its performance from first-hand knowledge.

"We do not consider a sale made when we get the name of the purchaser on the dotted line, nor when the installation is completed, nor even when the cash is received. We



ANCHOR

A GOOD NAME TO REMEMBER

FOR YOUR SUPPLY OF

BUTANE

AND

PROPANE

WHEN

- You need a tank car or a truck load in a hurry.
- Your year's requirements are to be contracted.
- One of our many shipping points will save you money.
- You need a product that will give satisfaction during each season of the year.
- You need any assistance to solve your problems.



A guaranteed supply from our plants in Texas, Louisiana, Oklahoma and Kansas.



Write or wire us for quotations

ANCHOR

PETROLEUM COMPANY

Atlas Life Building, Tulsa, Oklahoma

do not consider a sale definitely made until the range has proved absolutely satisfactory in performance. When we sell a range, it stays sold and every purchaser becomes an enthusiastic booster. Every satisfied customer can guide us to two or three good prospects to whom he has already recommended our ranges.

"When we sell a range, we explain everything and have it well understood before the sale is completed. We know of one dealer who, out of six ranges installed, was compelled to remove two of them because of features that were not understood by customers at the time of the sale. We try in our sales talk to keep away from technical features but if the customer wants to know why bottle gas is superior, we have to know our stuff and go into the subject at some length.

"One of the first questions that we meet is that of cost. We have many people who have an idea that it is too expensive. However, whether they are now using coal, wood, gasoline or kerosene, in nine cases out of ten we can prove that the use of bottle gas is just as economical.

Handling Electrical Competition

"Our greatest competitor, of course, is electricity. In this connection we are often asked for a comparison of costs. We explain that this depends upon the rates asked for electricity. In places where the rates are high, bottled gas can often be used at half the cost. In other places, where the rates are more reasonable, the difference is not so great. As a mat-

ter of fact, 75% of our sales are made in villages supplied with electricity while the remainder are made on farms most of which are on rural electrification lines. We take in a considerable number of electric ranges as trade-ins on bottled gas ranges. We even sometimes find a rural dweller who has an electric refrigerator or other electric appliances that are using up the entire amount of kilowatt hours allowed on a flat rate who becomes a customer for a bottled gas range.

"We also explain that the cost of operation depends upon how much gas is used. We have some customers with five or six in a family who use a 100-lb cylinder of gas in four months while others will use the same amount in three months and still others for whom one cylinder will last six months. It also depends, we explain, upon the condition and kind of range. If the range has good simmer-save burners and is well insulated to keep the heat in the oven, it does not cost as much as one in the opposite condition.

Gas Cooking Advantages

"While our range may cost more, we impress upon prospective customers the advantages it has over other types of cooking. We stress the fact that our simmer-save burner will keep eight quarts of water boiling after it has come to a boil; that vegetables can be cooked with a half-cup of water and that the same amount of water can be poured off when cooked, thus losing nothing during the

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JANUARY 1941

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1941 **MARCH** 1941

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MAKE 1941

APRIL 1941

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1941 **JUNE** 1941

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MORE PROFITABLE

JULY 1941

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1941 **AUGUST** 1941

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1941 **SEPTEMBER** 1941

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BY SELLING HYDRO-GAS

OCTOBER 1941

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1941 **NOVEMBER** 1941

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1941 **DECEMBER** 1941

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THE TROUBLE-FREE L.P. GAS SYSTEM

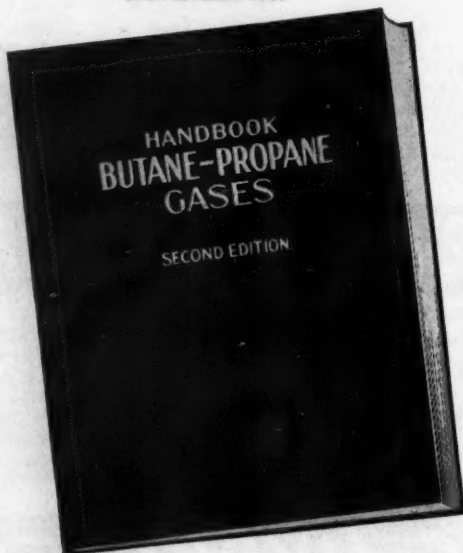
Hydro-Gas System's unequalled record of performance in all parts of the country under all conditions makes it worthwhile for responsible dealers to investigate. Your correspondence is invited.

SOUTHERN STEEL COMPANY, SAN ANTONIO, TEXAS

Handbook BUTANE-PROPANE GASES

LATEST REVISION
NOVEMBER 1938

SECOND EDITION



415
Pages

\$5 00
Plus
Postage

CONTENTS: Semi-Bulk Distribution; Use of Butane in Buses; Combination Propane Operated Utility Plant; Use in Internal Combustion Engines; Design & Installation of Storage; Supply from Petroleum Refineries; Engineering Data on the Lower Olefins; Domestic Appliance Testing and Utilization; Economical Comparisons with Coal, Oil, Electricity, Producer Gas, Manufactured Gas; Town Plant; Manufacture from Natural Gas; Special Uses; Volume Correction Factors; Transportation; Use with Other

Gases; Analysis & Testing; Properties of Mixtures; Bottled Gas Distribution; Bibliography; Central Plant Directory; Catalog Section.

We pay the postage on orders accompanied by remittance.

If you live in Canada add 50 cents excise tax
If you live in California add 15 cents sales tax

Published by **WESTERN BUSINESS PAPERS, INC.** publishers of

BUTANE-PROPANE
News

1709 West 8th Street, Los Angeles, Calif.

cooking process, not even the color of the vegetables, to say nothing of the valuable vitamins, etc. We emphasize in cooking meats that the oven does not dry out the meat, so that a perfect roast results. In fact, we explain that we have been able to secure as much as four ounces more meat than when cooked under other methods.

"We meet the question of explosiveness truthfully. We explain that while the bottled gas is not poisonous it is explosive under certain conditions—that if the gas is turned on and then not lighted, it will accumulate and then if it comes in contact with flames, will ignite the same as when kerosene is thrown upon hot coals, forming a gas and causing combustion. We explain that such negligence is similar to getting a short in electric wiring, when a fire will start without the application of a flame.

Most Sales Are for Cash

"While most of our sales have been for cash, we do sell on terms when we know the customer to be reliable. We carry all these accounts ourselves. In selling on terms, we give no premiums and charge no interest. We insist on such customers paying in cash the price of lease, cost of installation and price of 100 pounds of gas. These amount to approximately \$30. The balance of the sale is then paid in at the rate of \$10 or \$15 a month. We could sell many more ranges if we featured low, down and monthly payments. Instead, we educate our prospects to buy for cash and a year or so

later after their first inquiries sell them in this way. By following up this procedure, more than 90% of our sales are for cash.

"In addition to bottled gas ranges, we took on refrigerators and water heaters late in 1939, selling that year nine heaters from \$60 to \$76 and four refrigerators from \$172 to \$275. In making an installation, we hook these up on the same line as the bottled gas range.

"We also handle the gas, itself, and at present are selling about 1200 cylinders a year. We have a considerable number of business places like laundries, hospitals, lunch rooms, etc., having a combination of range, heater and refrigerator, that uses eight to ten cylinders a year.

"We believe that the sale of bottled gas ranges and other appliances is in its infancy—that they will increase rapidly for some time to come. We intend to continue our efforts in this direction as we have great faith in the use of bottled gas for cooking, heating and refrigeration."



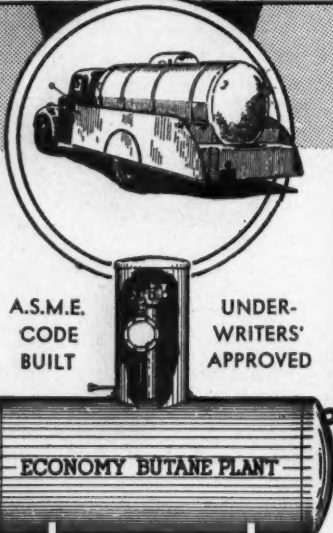
Stanley Hamberg, Advertising Man, Dies Suddenly

Stanley Hamberg, account executive for Frank C. Nahser, Inc., Chicago advertising agency that handles The Bastian-Blessing Co. account in BUTANE-PROPANE News, died suddenly in Chicago on Dec. 13. Apparently he was the victim of a heart attack.

Mr. Hamburg was 30 years old and was a prominent football player on the University of Chicago team in 1930-32.

LOOK TO THE
Leader
FOR BETTER TANK
Values

BUTANE-PROPANE....
 ★ UNDERGROUND TANKS
 ★ BULK STORAGE TANKS
 ★ TRUCK TANKS
 ★ SKID TANKS



A.S.M.E.
CODE
BUILT

UNDER-
WRITERS'
APPROVED

ECONOMY BUTANE PLANT

ECONOMY BUTANE-PROPANE SYSTEMS
 are constructed for 100.8 lb., 125 lb., and
 175 lb. working pressure for underground
 use; 200 lb. working pressure for above
 ground. Approved by Underwriters' Labo-
 ratories; inspected by Ocean Accident &
 Guarantee Corp., Ltd.

Write, Phone or Wire for Details
"Tanks By Banks"

DALLAS TANK
AND
WELDING CO., INC.
 201-5 West Commerce Street
 DALLAS, TEXAS

Regulations Are Pending For Butane in New Mexico

Regulations to be promulgated by the State health department of New Mexico within the near future, requiring close inspection of heating units in tourist cabins, will affect only those where butane gas is used, Dr. Frank W. Parker, Jr., district health officer, was advised today.

However, State Sanitary Engineer Paul S. Fox said, the State department plans to issue regulations governing inspection of natural gas and other units as soon as they can be prepared.

Dr. Parker announced his office plans to see that all such installations are checked and found up to standard. Not only must heating units be properly vented, he said, but there must be some means whereby fresh air can enter the cabin as well, even with doors and windows closed.



R. L. Eppler Butane Gas Co. Builds New Warehouse

Bob Eppler, of the R. L. Eppler Butane Gas Co., Tecumseh, Okla., has rebuilt and re-equipped his warehouse and offices for the distribution of liquefied petroleum gas.

Mr. Eppler is now receiving orders from Arkansas and Texas for full systems and has had to enlarge his facilities.



Fire Prevention Engineers Meet in Alhambra, Calif.

The Southern California Association of Fire Prevention Engineers, of which Frank D. Scovel, Kern county, is secretary, met in Alhambra, Nov. 1.

The main topic of the session pertained to the handling and storage of butane gas.

Sales Campaign Goat Has Dual Capacity

The Carolina Butane Gas Co., in Columbia, S. C., recently held a sales contest which ran for one month.

The company set aside one dollar per underground system sold during the month, to be paid to the individual salesman in the state turning in the largest number of dollar volume sales, with \$25 as a cash prize to each individual in each branch office who turned in the largest number of volume dollar sales for his branch.

To make the contest all the more exciting G. W. Jones, general manager, purchased an angora goat that was shipped collect, to the branch manager that was lowest the first week. That branch manager shipped it, collect, to the man who was the lowest the next week, and so on throughout the life of the campaign.

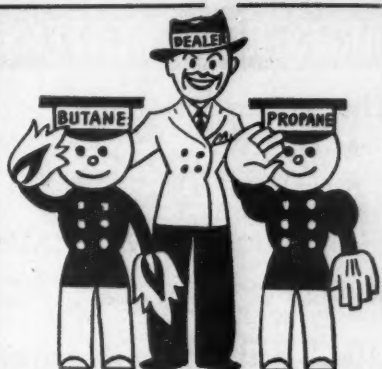
When the campaign ended, the branch having performed the highest job of dollar volume of sales, received it shipped, prepaid, for his own personal use or disposition. The sale brought in \$35,000 of dollar volume of business.

Frank Bullard, of the Conway branch, was high man with \$5100 worth of individual sales. The Carolina Butane Gas Co. operates branches in Conway, Walterboro, Greenwood, Spartanburg and Charleston, S. C., with headquarters in Columbia, S. C.

Jasper, Minn., is Replacing Manufactured Gas With Butane

Jasper, Minn., has replaced its former water gas system with a butane-air plant.

The new gas was turned into the mains on Nov. 9 and a special crew of men was engaged to make the adjustments on burners and to work out operating problems incident to the changeover.



PARTNERS

Not Competitors OF OUR CUSTOMERS

WE are manufacturers and wholesalers—not distributors or dealers. That's why Warren never competes with its customers.

OUR job is to manufacture the finest quality of LPGas that the natural gasoline industry can make under the most modern methods in the most scientifically designed plants . . . To furnish adequate shipping, storage and loading facilities from our 18 plants in seven states and several terminals strategically located.

If you'd like to have a connection with such a co-operative and dependable source of supply,

Wire or write

WARREN PETROLEUM CORP.

Manufacturers and Wholesalers

Tulsa, Okla.

BUY BETTER BUTANE

ARMSTRONG HEATERS

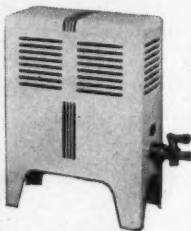
The 4 - Star Line

- ★ QUALITY
- ★ EYE APPEAL
- ★ LOW PRICE
- ★ REDUCED SERVICE CALLS

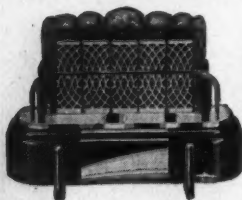
Four reasons why dealers are finding Armstrong Heaters such big sellers and such good profit makers.

10-C Bathroom Heater

Largest selling heater of this type. Last word in porcelain enamel beauty and heating efficiency. 1-piece body. Cast iron burner distributes even flame; equipped with adjustable air mixer. Reversible connection, left or right side. White with black lines or green and ivory. 11" wide, 14½" high, 5½" deep.



790 Radiant Heater



A popular seller. Body finished in brown vitreous enamel with heavy chrome hearth, front panel, dress guards and tubular legs. Glazed backwall is light tan shaded with brown. Light faced radiants harmonize with body. 2 sizes.

20,000 and 24,000 B.T.U. A. G. A. approval.

11 DIFFERENT STYLES

In the complete Armstrong line, there are 11 styles especially designed for liquefied petroleum gases—every one a big value—sized from 12,000 to 30,000 B.T.U. Finishes harmonize with any home or office surroundings.

PLAN NOW

for this profitable fall and winter business. Send for illustrated literature and attractive dealer discounts. Address Dept. BP.

ARMSTRONG PRODUCTS CORP.

Quality Appliances Since 1899
HUNTINGTON, W. VA.

Eastern Section Meets Jan. 16-17

Plans have been announced for the L.P.G.A. Eastern Section convention to be held on Jan. 16-17 at the Park Central hotel in New York City. The program, which will follow much the same schedule as last year, is to include exhibits, an arranged luncheon with special speaker each day, and an array of program subjects designed to give timely coverage of most important aspects of the LP-Gas industry. The convention will be open to all members and non-members engaged in the marketing and production of LP-Gas.

The program subjects and the men who will develop them are as follows:

"Value of Trade Associations to members of an Industry," Elliott Taylor of BUTANE-PROPANE News and Roy Johnson of John Wood Manufacturing Co.; "Advertising Plans," H. Emerson Thomas, Phillips Petroleum Co., F. W. Frost of Pyrofax, and W. H. Hoagland of Shell Oil Co.; "Installation and Service," C. C. Turner of Utilities Distributors Inc.; "Selling Commercial Installations," H. O. King of Standard Gas Equipment Co., Boston; "Merchandising," speaker to be arranged by L.P.G.A. Secretary Frank Fetherston, W. H. Hoagland of Shell, and W. L. Hauck, of Wm. B. Scaife & Sons Company; "LP-Gas Industry Present and Future," Frank Fetherston. A Round Table Discussion open to all will be chairmanned by H. Emerson Thomas of Phillips Petroleum Co. "A Resume of New Pamphlet No. 58 Adopted This

Year by the National Board of Fire Underwriters" will be given by H. E. Newell of the N.B.F.U.

On the morning of the second day in the exhibit hall, a special feature will be presented in the form of a demonstration covering three different kinds of food preparation by gas. This will be arranged by M. H. Douglas, Standard Gas Equipment Co., R. Tatem, Roberts & Mander Stove Co., and Fay Grow, American Stove Co.

Ample exhibit space has been provided, and manufacturers of appliances and equipment are planning attractive presentations of their new 1941 merchandise.

Cyr Bulk Plant Will Serve Two Michigan Counties

Construction was started Nov. 2 on a new 15,000-gal. propane bulk and filling plant for the Cyr Bottled Gas Co., of Marquette, Mich.

Located on Lake Superior and at about the middle of the Michigan Upper Peninsula, this plant will serve all of Marquette and Alger counties with what is termed "Cyr Gas," which is liquefied petroleum gas. The rest of the Upper Peninsula will be covered by bottled gas companies and appliance stores who have dealerships for distributing Cyr Gas.

The company has been in operation for four years.

Cooking School Sponsored by Skelgas at Cynthiana, Ind.

The Skelgas division of the Skelly Oil Co., sponsored a cooking school Oct. 19 at the Heiser Skelgas Service in Cynthiana, Ind., according to E. F. Heiser, manager.

D. G. Dickey, district representative for Skelgas, aided in the formation and working out of the plans.



IT CHECKS ON ALL THREE

- *Unfailing Supply*
- *Prompt, Sure Delivery*
- *Consistent, High Quality*

That's why it is wise to specify

SKELLYFUEL

(Butane and Propane)

• Strict supervision of every refining operation and modern refining equipment insure quality that meets your specifications. Huge natural gas resources in six states insure the source of supply. You get what you want—when you want it—if you specify SKELLYFUEL.

WRITE, PHONE, WIRE

SKELLY OIL COMPANY

TULSA, OKLAHOMA

KANSAS CITY, MISSOURI

BUTANE *Power*

Bulk and Filling Plants Located at Pratt, Kans.

G. B. Darling & Sons are establishing a wholesale and retail liquefied petroleum gas plant at Pratt, Kans.

A bulk station for butane will be used for filling fuel tanks on the company's truck equipment and propane storage will serve the filling plant for bottled gas cylinders. A complete line of butane and propane equipment and appliances will be carried.

C. S. Painter Builds New Workshop and Office

C. S. Painter, butane dealer in Dos Palos, Calif., recently completed construction of a new 40 x 40 ft. workshop and office building. The workshop is designed for the servicing and repairing of a fleet of trucks used in transporting butane.

Mr. Painter started in the butane transportation business in 1933 and now has three large truck-and-trailer units, one semi and two smaller trucks hauling butane. In September these trucks traveled 27,000 miles, hauling over one-half million gallons.

Ransome Co. Opens Another Branch in California

The Ransome Co., Emeryville, Calif., recently opened a new branch office in Vacaville, Calif., with W. Pearson as local representative and E. H. Uhl in charge of installations. From this office butane gas and appliances will be distributed throughout

Solano and Yolo counties.

The company displays in the office and show rooms, ranges, water and floor heaters, and other equipment using butane gas. The storage tanks are located on the Uhl ranch, and the installation and repair shop is at 642 Main street.

Mr. Uhl has been using butane in his own tractors and trucks for the past two years and with this first-hand experience with butane as a source of power, decided to enter the commercial field.

Philgas Issues Booklet On Phillips "Superfuel"

A booklet has come from the press recently that vividly describe Phillips "Superfuel", a butane-propane mixture that is used for internal combustion engines and marketed by the Philgas Division. It is known as Bulletin 84 and is available to those who are interested in automotive applications of LP-Gas.

Of paramount interest are illustrations in color showing a flow diagram of automotive changeovers and a comparison of equipment with that used for gasoline motors.

New Butane Station Built By J. C. Myers in Barstow, Calif.

J. C. Myers, of Barstow, Calif., distributor for Butane, Ltd., of Los Angeles, has recently completed a new service station on the outskirts of Barstow. The station will include a 4000-gal. butane tank, from which local domestic and commercial users will be supplied, as well as highway traffic, and will be open for truck service 24 hours a day. Trucks hauling ore to nearby mines will also be fueled.

Mr. Myers has recently acquired the interest in the firm formerly held by C. A. Yale.

Butane Gas Co. Receives Two 3200-Gal. Tank Trucks

Two new 3200-gal. capacity transport tank trucks were recently added to the fleet of Zero Butane Gas trucks which serve the Butane Gas Co., Inc., 1120 W. Markham St., Little Rock, Ark. (Photo of two trucks on this page.)

They are operated by B. M. Brazil, of Magnolia, who states that he now has six trucks that have State inspected meters that transport butane gas exclusively from the Magnolia oil fields.

All carload shipments of butane and propane for the Butane Gas Co., Inc., are made from Texas, according to B. T. Harris, manager of the company.



Butane Plant to Serve Trucks Planned at Bettendorf, Iowa

The American Petroleum Co. recently asked for permission to erect a 20,000-gal. storage tank at Bettendorf, Iowa, to serve butane to trucks.

The city council and fire department are consulting with the National Board of Fire Underwriters before granting a permit.

Up-Keep Costs on Changeovers

Sometimes the prospective purchasers of LP-Gas motor conversion units look over the equipment involved and bring up the question of maintenance costs. The butane items are a heat exchanger, and the high and low pressure regulators, and these replace the fuel pump and carburetor bowl, with float and jets.

In a recent checking of one installation, interesting figures were revealed which showed an almost negligible replacement of parts. This operator has had 20 heavy duty units running for two years and eight additional ones operating for one year.

A total of more than 2,200,000 miles have been run by these units. The total cost for replacement parts, including throttle arms and throttle arm bushings, for the entire fleet has been but \$38.



Hauling butane with butane-powered trucks

What price **PUMP ECONOMY**



Smith Butane-Propane Pumps are designed strictly for L.P.G. service. Performance records show that they give **MORE HOURS** of dependable, economical performance under all operating conditions: they demand less nuisance servicing... require fewer shutdowns for repairs... more dependable operating hours spells greater total pumping economy.

Because of these facts, Smith Butane-Propane Pumps are now being used as standard equipment on Butane-Propane Dispensing Units sold by leading Butane-Propane Engineers.

Investigate the exclusive features of Smith Pumps and compare their performance records before you buy.

Pumps for All Services made particularly for butane-propane bulk plants and tank trucks.

SMITH PRECISION PRODUCTS CO.

1135 Mission St., South Pasadena, California

SMITH
BUTANE-PROPANE
PUMPS

Conventionites Talk on LP-Gas

DEALERS, salesmen and servicemen of the National Butane Gas Co. met in Memphis, Tenn., Dec. 16-17 to attend to the company's Second Annual Sales and Service Meeting.

The evening of the first day was given over to a banquet and the afternoon of the second day was devoted to an inspection of the company's plant in Memphis under the direction of T. G. Tacket, general manager.

The remainder of the two-day session was devoted to the reading of papers and talks by men identified with the liquefied petroleum gas industry. The program:

"Our Purpose," by J. T. Gregory, president, National Butane Gas Co.

"LP-Gas—Its Growth, Its Possibilities," by J. Woodward Martin, president, Liquefied Petroleum Gas Association.

"Moisture in Gas; How to Eliminate It," by P. G. Boyd, Airlene Gas Co., Fulton, Ky. (Full text will be found on Pages 22-24 of this issue of BUTANE-PROPANE News.)

"Carburetion Equipment," by Ralph G. Abbott, Ensign Carburetor Co., Dallas, Texas.

"LP-Gas and Cotton Drying Equipment," by J. E. Greenfield, Hardwicke-Etter Co., Sherman, Texas.

"State Organizations and Officers," by Earl Spears, Hunter Riley and J. R. Holicer, each president, respectively, of the Georgia, Arkansas, and Louisiana State LP-Gas associations.

"Proper Installations," by J. D. Newcomb, Jr., State Inspector, Little Rock, Ark.

"Value of State Regulations," by

W. P. Thomas, State Inspector, Baton Rouge, La.

"Service, a Prerequisite to Sound Operation," by Alva F. Traver, Jacksonville Gas Co., Jacksonville, Fla.

"Our Method of Securing Prospects," by W. S. Christopher, Atlanta, Ga.; W. G. Petty, Jr., Memphis, Tenn.; Thad L. Fowler, Hattiesburg, Miss.

"Selling LP-Gas Installations," by Leonard Warden, West Memphis, Ark.

East Texas Dealers Organize New LP-Gas Association

Dealers and distributors of LP-Gas in eastern Texas organized the East Texas Liquefied Petroleum Gas Association on Dec. 9 in an effort to promote the effectiveness of gas service in that district in the interests of dealers and the public, alike.

Officers elected are: Joe Gilbert, Nacogdoches Appliance Co., Nacogdoches, president; Earl Andrews, Andrews and Riviere, Tyler, vice president; and Guy Highnote, Automatic Gas Co., Tyler, secretary-treasurer. The application for a charter was signed by N. L. Robertson, Gordon Box, and H. C. Pittman. The committee appointed to work out recommendations for increasing safety and developing the industrial and domestic fields consists of W. M. Foster, Robert Hutson and A. A. Pickens.

Green's Fuel, Inc., Will Open Office in Tallahassee, Fla.

A new showroom and office is being opened in Tallahassee, Fla., by Green's Fuel, Inc. It will carry a full line of appliances and storage for liquefied petroleum gas.

Another bulk storage plant has been established near Tallahassee which will be under the management of the West Florida Gas Co., and will supply gas for the following Florida counties: Jefferson, Leon, Liberty, Wakulla and Gadsden.

ACCURATE LPG METERING

VULCAN gas meter and regulator diaphragms are being used more and more extensively in the LPG industry. Made entirely of domestic materials, non-leather and non-rubber, the VULCAN DIAPHRAGMS do not shrink in dry gases. They insure more accurate registration in meters . . . more sensitive operation in regulators.

Leading meters and regulators are now obtainable with Vulcan Diaphragms. Write for particulars.



Seams in Vulcan Diaphragm Loops are vulcanized, not stitched, as shown above, and are permanently leak-proof. The lower picture shows a Vulcan Regulator Diaphragm. Note how it is molded and shaped to the contour required. No oil necessary . . . no shrinkage in dry gases.

VULCAN PROOFING COMPANY
First Avenue and Fifty-Eighth Street
Brooklyn, New York

VULCAN

meter and regulator
DIAPHRAGMS

PRODUCTS

Water Heater

*Continental Water Heater Co., 1637
N. Spring, Los Angeles, Calif.*

Model: Spartan.

Description: A heater especially designed for installations requiring



many gallons of hot water each day. Has large heating surface—three separate flues run full length of tank—and will heat approximately one gallon of water per minute. Especially adaptable for shops and restaurants. Double thickness of insulation insures utilization of all heat. Heater has complete automatic controls, and safety devices. Burner

is of 40,000 B.t.u. capacity. Comes in seven sizes with capacities from 17 to 63 gallons.

Room Thermostat

General Controls Co., Glendale, Calif.

Model: T-80 Series.

Description: There are three thermostats in the new T-80 Series—a regular thermostat, a thermometer-thermostat, and a timer-thermostat. They extend but 13/16-in. off the wall. Designed to obtain a flush-mounted appearance but actually are surface mounted on unbreakable plastic base of standard wall

switch box size. No wall recess is necessary. The thermally responsive mechanism is the large thermostat cover itself, unhoused, subject to immediate radiant heat and air temperature changes. No lacquer or paint is used to retard heat transfer. Intimate contact between the cover and bi-metal operates the thermostat; bi-metal differential is but 1/4°F. without false heat



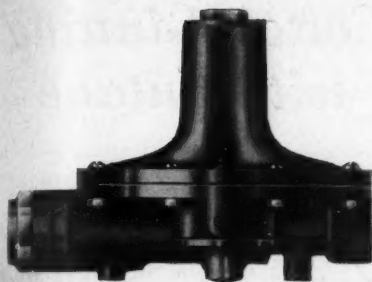
input, and action is as fast as any standard mercury thermometer. Another improvement in design is the manner in which the plastic base acts as a blanket to thermally isolate the thermostat from the wall. "Cold walls," wall drafts and wall radiation do not affect the operation of this device.

Regulator

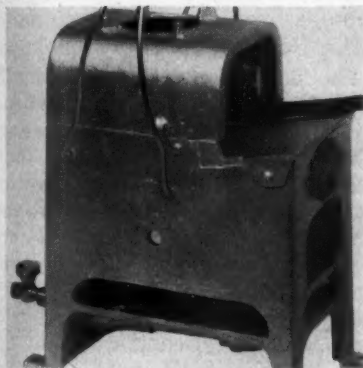
Fisher Governor Co., Marshalltown, Iowa.

Model: Type No. 722.

Description: This model is specially designed for installations where large demand loads must be carried because it will pass 300 cu. ft. of LP-Gas per hour at as low a tank pressure as 5 lbs. It will pass the same capacities at vaporizing pressure in the vaporizing type of system. Its large capacity is due to the assembly design of the diaphragm, valve disc and lever. The gas flowing through the regulator is confined to a venturi flow channel which causes an artificially low pressure under the diaphragm as the flow demand increases, result-



ing in the regulating valve opening wide and at the same time maintaining a constant outlet pressure. Body and cover are of alloy metal. Inlet adaptor is of high quality brass. Integral relief valve is factory set and sealed for 1 lb. Diaphragm breather connection is vented through relief valve opening. Shipping weight: 7 lbs.



Bench Furnace

F & E Manufacturing Co., Oakland, Calif.

Model: Type No. T-3.

Description: This non-clogging, portable bench furnace is designed for fast and efficient heating with propane or butane at high or low pressure, depending upon speed desired. Heat is supplied to the heel of the iron, a shelf in the rear of the fire-

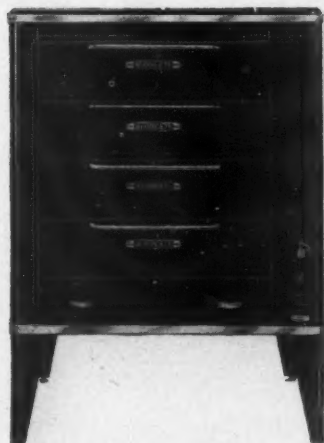
box forms a rest and protects the points of the soldering coppers. Drippings from the points of the irons fall below. The cover on the hood may be removed and a melting pot used for melting small quantities of soft metal, such as lead, babbitt, tin, zinc, etc. Equipped with an "F&E" spread type burner, with one needle control valve. Designed for solder coppers up to 12 pounds per pair.

Commercial Oven

The G. S. Blodgett Co., Inc., Burlington, Vt.

Model: No. 915.

Description: The new 900 series is a complete line of streamline, portable, baking and roasting ovens for restaurants, hotels, and all commercial users. The series is assembled from three units made in two deck sizes, plus three new multiple deck models, available with either three or four decks. Special features include four inches of Fiberglas insulation; liquid-tight decks; new controls with non-slip dials, heavy, counterbalanced doors; positive lighting system, and a steam jet as standard equipment. Size of each deck on No. 915: 33x22x7 in.



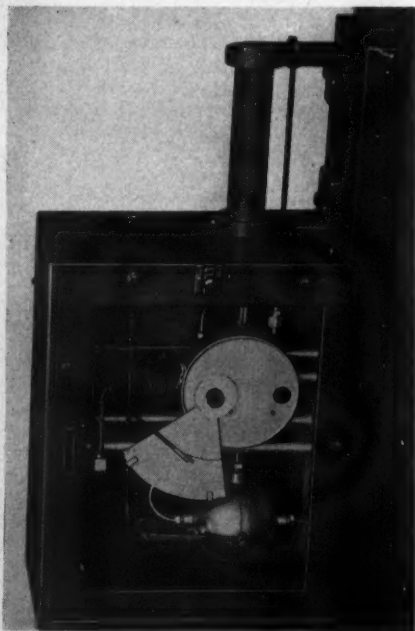
LOOK AT IT THIS WAY



**NO STUFFING
BOXES, Friction,
Wear, or Leakage**
eliminate the need for further
care or adjustment after the
instrument is installed. Perma-
nent responsiveness to minute
variations in specific gravity
is assured.

**ANUBIS LIQUID
GRAVITOMETERS**

INDICATING OR RECORDING TYPES,
With or Without Full Temperature Compensation
SEND FOR DETAILED BULLETIN
AMERICAN RECORDING CHART CO.
3113 EAST 11TH STREET, LOS ANGELES, CALIFORNIA



Cotton Ginning with Butane

By O. D. HALL

QUICKER starting of machinery and an increase of power with smoother operation, have resulted from installation of a butane-fueled engine to replace an oil engine in the cotton gin of the Southwestern Cotton Oil Co., at Criner, about 15 miles southwest of Purcell, McClain County, Okla.

The conversion was completed about Nov. 1. The Oklahoma Butane Gas Co., Oklahoma City, Okla., installed a supply tank of 1,100-gal. water capacity, equipped with a Rego compact unit regulator.

The butane is carried in liquid form from the tank, located about 190 ft. from the gin, to the vaporizer at 15 lbs. pressure. It is then reduced to 8 lbs. in the vaporizer regulator, at which pressure it enters the carburetor fuel regulator.

The butane was taken from the tank in liquid form because sufficient volume could not be obtained for the larger sized power unit by connecting with the vapor side of the supply tank.

D. H. Binkley, of the Binkley Co., Oklahoma City, western Oklahoma distributors of Ensign butane-propane carburetors and equipment, who furnished the carburetion and vaporization units on the Criner installation, said that in the process used there, liquid fuel is supplied to a vaporizer which

utilizes the heat of the water in the engine and assures a constant supply of fuel to the carburetor with no pressure drop. The pressure is not dependent upon the atmospheric temperature vaporizing the fuel in the supply tank.

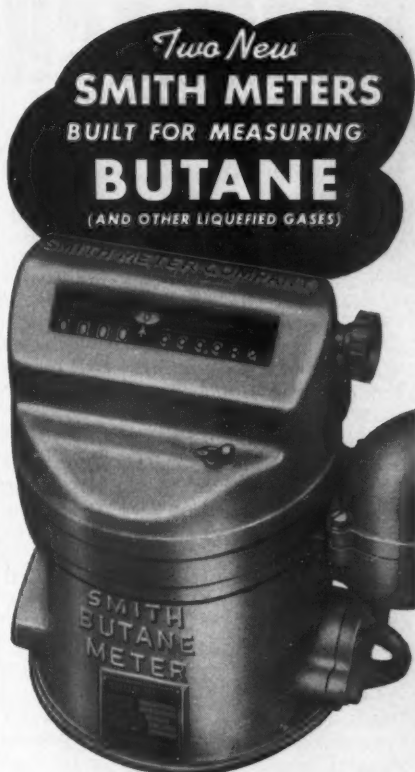
A 125-hp. gas engine, converted to use of gasoline, was installed at the Criner gin. It replaced a 135-hp. oil engine which, when carrying its full rated capacity, slowed down perceptibly. The butane-fueled engine, however, although rated at 125-hp., carried the 135-hp. load smoothly and without loss of a single revolution. The butane engine kicks off the cotton ginning machinery 90% quicker than the old oil-burning engine, while increased efficiency and lower maintenance cost of the butane-operated engine more than repays for the expense of the conversion, it is claimed.

The butane-powered engine operates the four stands, of 70 saws to each stand, in the gin with such economy and efficiency that similar installations are being considered by other cotton gins in Oklahoma.

◆ ◆ **S. M. Robertson is Manager Fabriform Steel Products Co.**

S. H. Robertson, formerly with Butane Tank Corp., is now manager of the butane division of Fabriform Steel Products Co. in Bell, Calif.

Mr. Robertson states that Fabriform manufactures a full line of domestic, storage and transport tanks for LP-Gas use. The shop is equipped to produce air and hot water tanks for any purpose and has a fast press for the production of all heads used in the plant.



Both are built on the time-tested Smith rotary principle which combines *speed* and *accuracy* not found in any other meters.

Standard Model BU-40 has a capacity of 50 g.p.m. and can be supplied with horizontal reset counter or with a 6" or 10" vertical dial, horizontal Set-Stop counter with or without ticket printer. This meter is for service where corrosion is not a problem. *Master Model BU-40* is for service where corrosion is a problem.

Both models will operate under pressures up to 250 lbs. per sq. in. and can cope with the high vapor pressures incident to metering propane. For details, write the office nearest you.

SMITH METER COMPANY

SUBSIDIARY OF A. O. SMITH CORPORATION
Factories at Los Angeles and Milwaukee

Sales offices at New York, Chicago, Houston, Los Angeles. Local stocks at convenient points.

RESEARCH

- **BUTANE-PROPANE** *News* wishes to keep its readers informed regarding technical and practical advances concerning research, manufacture, development, and transportation in the liquefied petroleum gas field. In this column will be found a resume of recently published articles, papers, bulletins and books dealing with the industry's various phases.—Editor.

Minerals Yearbook—Compiled under supervision of H. Herbert Hughes, Bureau of Mines, U. S. Department of the Interior. Price \$2 (cloth), 1514 pages. A record of developments in the mineral industry of the United States in 1939, including informative chapters of production and sales of liquefied petroleum and natural gas.

Tank Content Nomograph—D. S. Davis. *Industrial and Engineering Chemistry*, Oct., 1940, p. 1412. Where vertical space is limited, it is frequently necessary to install long cylindrical tanks so that they rest upon their sides rather than upon their circular bases. While convenient mechanically, this practice makes the calculation of contents for any given depth somewhat difficult, since the volume per unit depth increases with increasing depth for the lower half of the tank and decreases for the upper half. The chart shown greatly facilitates these calculations.

Safety and Fire Prevention in Chemical Industry—*Chemistry and Metallurgy*, Oct., 1940, pp. 700-706. The purpose of this report is first to present somewhat statistically the

status of plant safety in American chemical industry, then to analyze the principal causes of accidents and personal injuries in order to point out the means for their avoidance. Each plant presents its own problems, but the fundamentals of an adequate safety organization are the same in all industries. These simple rules are therefore presented as definite steps in a program any plant—large or small—can adopt. To assist the safety work of the individual plant or company, extraordinary facilities and services are available from such non-profit organizations as the National Safety Council and the National Association for Fire Protection. Closely allied with safety is the organized work now being done toward elimination of occupational hazards and diseases. The whole program is one that takes on new significance and develops new materials and processes to produce the many products needed by the national defense.

Calculation of Absorber Performance and Design—Improved Methods—George Horton and W. B. Franklin. *Industrial and Engineering Chemistry*, Oct., 1940, pp. 1384-1388. This paper presents the derivation of general absorption and stripping factor equations. No assumptions are involved, and hence the equations are applicable to all cases of absorption and stripping. A simple rule is presented to estimate the knockout or stripping gradient from plate to plate, and two methods of calculating absorber performance are illustrated. These methods of calculating absorber and stripper performance have been compared to plate-to-plate calculations. In spite of discrepancies on intermediate plates, good over-all agreement was obtained between both methods and the plate-to-plate calculations.

New Recycling Plant Departs From Conventional Processing—F. H. Love. *Petroleum Engineer*, Sept., 1940, pp. 86, etc. In the La Rosa field, Refugio County, Texas, the Coronado Corp. has completed and is now operating its 46,000,000-cu. ft. recycling plant. The products of the plant, which is operated on the absorption principle, at present are stabilized distillate and butane, although the design is such that all grades of motor fuel, special solvents, propane, butane, kerosene, naphtha, and natural gasoline can be manufactured. A two-compartment dephlegmator operates at 40 lb., producing naphtha overhead for blending with butane-free gasoline. A flow sheet of the plant is shown.

Supercharging With Motor-Driven Blower—Ralph Miller. *Diesel Power*, Oct., 1940, pp. 850, etc. In this article the author gives advantages and disadvantages of supercharging diesel engines, and discusses results of tests made on a superior diesel engine using a motor-driven blower.

Piping Flow Problems Made Easy—William Goodman. *Heating, Piping and Air Conditioning*, Oct., 1940, pp. 603-606. Because of their convenience, charts are widely used for sizing piping systems. The chart illustrated, eliminates the need for a separate chart for each fluid as it is based on Reynold's numbers and is universal in scope as long as the flow is turbulent and not streamline. This may be determined by a simple equation, and except for oil, flow is turbulent for most of the cases encountered in commercial engineering work. The chart can be used not only to size a pipe for a given rate of flow and pressure drop, but also to determine the rate of flow for a given pipe size and pressure drop,

or the pressure drop for a given pipe size and rate of flow. A particularly helpful use of the chart is in quickly determining the pressure drop for several different pipe sizes.

Cost of Steam With Oil As Fuel—I. E. Brooke. *Heating, Piping and Air Conditioning*, Oct., 1940, pp. 615, 616. For use in his consulting work, the author has prepared charts for determining the cost of generating 1000 lb. of steam using coal, oil or gas as the fuel. Whether the basis of comparison is 1000 lb. of steam generated, a certain number of gallons of water heated, or some other basis, the relative cost will not change. Feature of the charts is that complete data are given, but that they are still easy to use. The one for oil is reproduced in this article, the chart for coal appeared in November.

X-Ray Examination of Pipe Joint Welds—W. M. Henderson. *Gas*, Sept., 1940, pp. 29, 30. Abstract of a paper presented before the Technical Section of the Pacific Coast Gas Association, Sept. 19, 1940.

Explosive Properties of Cyclopropane: Prevention of Explosions by Dilution with Inert Gases—By G. W. Jones, R. E. Kennedy and G. J. Thomas. U. S. Bureau Mines, R. I. 3511.

Carelessness With Gasoline—W. H. Gardner. *Fire Engineering*, Sept., 1940, pp. 446-448. A discussion of the fire hazards present in handling gasoline.

Synthetic Rubbers: A Review of Their Compositions, Properties, and Uses—By L. A. Wood, U. S. Bureau of Standards, Circular C-427.

AUTOMATIC GAS SHUT-OFF CONTROL Thermocouple Type



General Controls For direct gas line shut-off. Pilot flame applied to thermocouple element makes electrical contact, holding valve open. No outside current is used. Upon pilot flame failure, valve automatically closes. After flame failure, valve must be manually reset. Standard thermocouple length 30". Valve sizes $\frac{3}{8}$ " to $1\frac{1}{2}$ ".
Write for 1940 Complete Catalog

GENERAL CONTROLS
450 E. Ohio St. Chicago, Ill.  247 5th Avenue New York City

START THE YEAR RIGHT

Build year-round gas sales

Your customers will enjoy cooking on

AUTOMATIC
AND
ROYAL ROSE
GAS RANGES
IN
1941



Low initial cost combined with durability and efficiency make these ranges easily saleable.

Write for details

J. ROSE & CO., INC.
MANUFACTURERS

25 West 29th St., New York, N. Y.
Established 1885

Engine Fuel Economics

LIQUEFIED petroleum gas has entered the engine fuel market in a serious way and is making consistent gains in this form of utilization. This being a fact, what is the reason therefor and what future expansion in this field can be expected? Is this expansion desirable and, if so, what can be done to insure its permanence, with a profit to the industry? What is the competitive situation in regard to cost and performance as compared to other available fuels? What effect has its use as an engine fuel on the bottled gas distribution?

All of these and many more questions arise when the use of LP-Gas as an engine fuel is considered, and this expansion will affect every company in the industry.

Careful Planning is the Need

By using cooperative planning and sensible sales practices important possibilities lie ahead and, conversely, if due to lack of knowledge or handling or service costs, and the fake lure of gallonage becomes greater than the desire for a fair profit, a lot of grief is in store.

When LP-Gas was first introduced as an engine fuel it had many handicaps to overcome. These included a lack of practical trouble-free carburetor equipment, poor facilities for distribution, variable qualities of fuel including fuels

with corrosive properties, lack of knowledge of converting engines, over-enthusiastic salesmen, improperly designed handling equipment, lack of safety orders and many other troubles.

In order to interest potential users and find pioneers to prove the fuel it was necessary to offer inducements and these were in the form of trial installations and low-priced fuels.

Started Seven Years Ago

Seven years have passed since the first real commercial development started and most of the handicaps have been overcome and LP-Gas has proved itself to be equal to premium grade motor fuels.

This development started on the Pacific Coast and the growth has been centralized to this district until the last few years when the consumption as motor fuel has spread eastward.

The reason for the rapid growth of this phase of the industry is because the user has profited greatly, not because the distributor has prospered.

Up to the present time it has been sold in a buyer's market with the user pitting one seller against another and the sellers striving to make a profit by increasing gallonage on the theory that a huge turnover with a very small margin of profit is the only way out.

The oil industry has been established many years and has established fairly definite differentials for handling gasoline, which allow the distributor and the retailer a



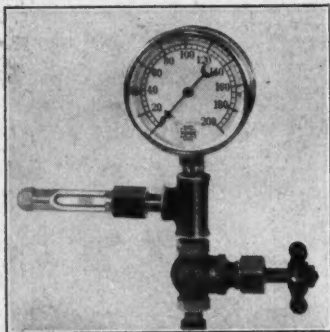
If your customers want a lot of heating comfort from a small space, show them this Bryant Vertical Winter Air Conditioner, for use with L. P. G. It's so compact it fits into a small closet or niche. Ideal for basementless houses. First cost and operating cost are so low that the most modest home can enjoy the luxury of complete winter air conditioning. You'll be doing a good job for your customers and yourself by recommending Bryant Vertical Winter Air Conditioners.

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FOR BOTTLED GAS AND OTHER LIQUEFIED GAS PRODUCTS

The moisture content of gas passing through the Tester is shown by the color of indicating cartridge.

Write for Literature on Gas Testing Apparatus

THE REFINERY SUPPLY CO.

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Truck Tanks Transports Skid Tanks Storage Tanks Underground Systems

All tanks inspected by Ocean
Accident & Guarantee Corp., Ltd.

We fabricate to your
individual requirements.

M McNAMAR

BOILER & TANK CO.

TULSA, OKLA.

SALEM, ILL.

fair profit. The user and retailer cannot buy direct from the refinery which protects the distributor. This is true in the handling of LP-Gas by some companies, but others sell direct to the retailer or the users and often the distributors sell direct to the user in competition with their own retailers. Such a sales condition naturally causes chaos, with a result that all of the effort and sales work is for the benefit of the refiner and the user with a merry battle going on among the little fellows for more and more gallons.

The successful handling and sale of LP-Gas as an engine fuel requires more expensive equipment and a personnel that has a knowledge of the special handling required. A commensurate return should be allowed.

Other Evils Follow Profit Lack

The result of the lack of profit in this phase of the business tends to the installation of equipment on a price basis with the result that there are installations in operation that are not as safe as they could be and the methods of measurement are often inaccurate.

In time these things will react upon the industry as a whole.

It is proven through use that LP-Gas is a better fuel than gasoline or diesel oil for internal combustion engines.

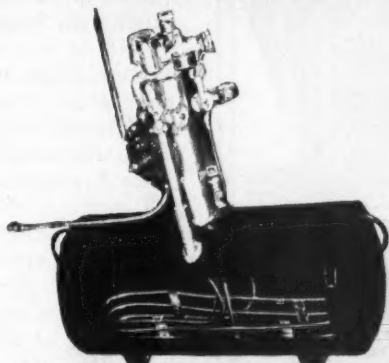
Commercially its competition is with high octane gasoline and diesel oil. Due to the additional investment in utilization equipment that the user is required to make it is necessary to offer some inducement

FLASH-O-GAS SYSTEMS

Approved by
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Laboratories

Constructed under
ASME Code

Available in both
Above and Below
Ground Types



Flash vaporization is
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the following butane
authorities:

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Butane and Propane Gas Systems—Scaife ICC
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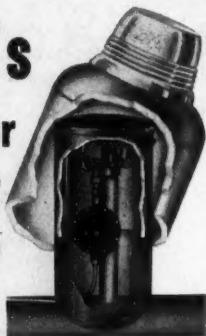
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PIONEER INSULATED HEAD

with proper size tank to adequately handle the maximum winter load of all connected appliances. Pioneer insulation prevents head freezing . . . reduces costly service calls . . . increases customer satisfaction. All Pioneer Plants conform to the ASME code. Write for details of the easy-to-sell, 5-year guaranteed Pioneer Line.

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of dehydrated

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Marketing Department

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Tulsa, Oklahoma

ment in price to overcome the resistance caused by this initial cash outlay. This however, should not be greater than will allow a pay-out in one to two years.

Diesel Oil Competition Explained

Competition with diesel oil is at the present time on a false basis and the seller should not reach too far to obtain this business. Diesel oil as fuel for small engine use is still being sold on the basis of a black oil product. The newer diesel engines, however, require a high quality fuel for efficient operation and if and when the oil companies take stock of their operations and check the cost of producing and handling these products and the distributors and retailers analyze their profits from this type of business there is a possibility that the competition from this source will be less.

The greater weight per gallon of diesel compared with the fact that the federal highway tax is not applicable and that in many states the road tax is equal or less on a gallonage basis tends to overcome the higher maintenance costs, greater investment for engines and even compensates for the smoke and smell nuisance in the eyes of many operators.

There is, however, so much available business for the use of LP-Gas as engine fuel without reaching out for the border line cases, the potential distributor should take the cream at this time and go after the tough ones later.

The effect of using LP-Gas as an engine fuel affects the bottled or

domestic end of the business in several ways. As bulk stations are built to handle engine fuel and the distributors become more general, there is a tendency for the domestic user to take advantage of the sources of supply of engine fuel and to purchase it and to fill their own tanks that are used in domestic service. Naturally this encroaches on the field of the legitimate bottled gas distributor and is a threat to his existence.

This has resulted in many bottled gas dealers entering the engine fuel business to protect their domestic distribution.

Conversely, with the extension of bulk use to the farms and industries the fuel becomes better known and greater domestic utilization is realized.

There is room for both the domestic utilization and the engine fuel use and in many instances a combination business can be successfully conducted with a continuing increase in load and appliance and equipment sales.

As engine fuel use extends into new territory the prospective handlers should acquaint themselves with the conditions existing in the areas now covered and take advantage of the mistakes and experience already gained to prevent further repetitions of costly errors.

New Dealer for Davis-Mason Co.

The Davis-Mason Co., with headquarters at Post, Tex., has recently announced that Carlos Alexander, of Ropesville, Tex., will act as dealer for their butane plants.

The Story fo Viking



All Viking Butane-Propane Pumps are designed with an extra long stuffing box—filled with added rings of special, treated packing, divided in the middle with a lantern ring . . . an exclusive feature that guards against leakage even when pumping highly volatile liquids.

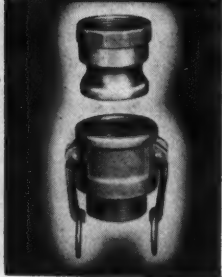
But check Viking part for part . . . read the complete story of Viking Butane-Propane Pumps in Bulletin 2301-40 . . . it gives technical data and illustrations of the full line.



Look for This Trade
Mark—the Sign of
a Genuine Viking

VIKING PUMP
COMPANY
CEDAR FALLS, IOWA

EVER-TITE QUICK COUPLING UNITS



Tight Connections! No Threads!
SPEED — SAFETY — ECONOMY

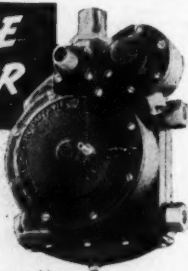
Ever-Tite Couplings have proven invaluable wherever connections are made—at bulk plants, on tank cars, for truck deliveries and on storage tanks. They offer years of trouble-free service and are designed for pressures to 3000 lbs. in sizes from 1/2 in. to 8 in.

Write for full information

EVER-TITE COUPLING CO.
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The BUTANE CONVERTER

*That's
Outstandingly
Superior*



The Dickson Butane Carburetor, unlike ordinary converters, is a compactly designed, trouble-free unit—completely self-contained. By means of Dickson's "unique" vaporizing principle—Butane is efficiently converted from its liquid to a fully dry gasified state.

For Converting
Gasoline-Operated
TRUCKS
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BUSES &
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to Butane

WRITE TODAY
FOR
FULL DETAILS

DICKSON
BUTANE CARBURETOR
"The Superior Converter for A Super Fuel"

Manufactured & Distributed by PENINSULA BURNER & OIL CO.
1739 Leslie Street, San Mateo, California

The Whys of the Safety Code

THIS is the seventh installment of explanations of the objectives which prompted the writing of the National safety code by the N. B. F. U., as contained in Pamphlet No. 58. Others appeared in the May, July, September, October, November and December issues, and more will follow later. Those desiring more specific information may write to our Research Department.

Continuing with Division 1, we come to Section 15.

15. Vaporizing and Housing

(a) *Why is high pressure gas prohibited inside of buildings on domestic installations?*

There is no need to use high pressure gas in a building and the logical place for the regulator is outside. Appliances and utilization equipment are designed for low pressure service and will not hold tight at high pressures. Gas under high pressure may condense in the lines, causing a fire hazard at the appliance.

(b) *Why are vaporizers required outside of buildings?*

The main reason for locating the vaporizer outside of buildings is to reduce the hazard of having liquid fuel entering the building. When repairs are made or when lines are disconnected, it is safer to exhaust the liquid outside than in a building. In case of a fire in the build-

ing caused by other than the LP-Gas the failure of lines containing only gas is less hazardous than the failure of lines carrying liquid.

(c) *Why are markings required on vaporizers?*

Markings are required as to surface and working pressure so safety valve sizes can be checked.

16. Liquid Level Gaging Devices

Why are gaging devices necessary?

Every storage container is required to have a liquid gaging device. This is to enable the person filling the tank to determine the approximate quantity on hand to help prevent overfilling, and also it can be used to determine if a tank has been overfilled.

(17) Filling Densities

Why are filling densities set forth?

It is essential to allow vapor space in a container to take care of the expansion of the liquid with an increase in temperature. The filling densities set forth in the table allow for expansion in the usual commercial movements of LP-Gas and are based on the ICC requirements. They are conservative and if adhered to no trouble should be encountered due to liquid expansion.

18. Transfer of Liquids

No comments.

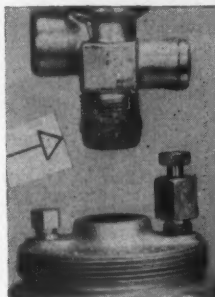
19. Painting

Why is light colored paint desired?

Light colored paint is desired on tanks to reflect the heat to prevent rise in pressure in the summer.

NEW!

BU-SEAL



● Here, at last, is a sealing compound that will seal tank and cylinder valves for LPG use. Bu-Seal sets without permanent hardening; valves once set, may be removed (without damage); is not soluble in water, oil or gas.

BUTANE

Mileage Meter

● Increase your mileage on any engine 10% with this inexpensive, easy to install, mileage meter. Meter is constructed so driver can tell instantly whether or not engine is being driven at maximum efficiency. It pays for itself.



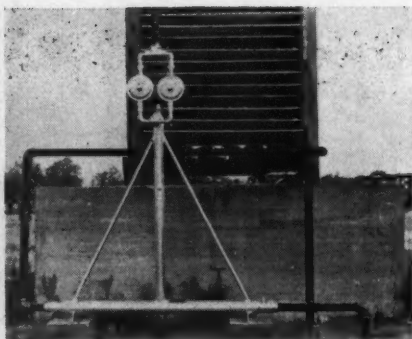
We carry a complete stock of Pressed Steel I.C.C. Cylinders for immediate delivery, also tank fittings, regulators, pigtails, gauges.

ELECTRIC AND CARBURETOR ENGINEERING CO.

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J. & S. BUTANE VAPORIZER

For use on all industrial installations where the connected load exceeds 200,000 B.T.U. per hour, such as small communities, schools, tourists camps, cotton gins, feed mills, dehydrating plants and as standby units wherever power or heat is used.

Easy to install. Simple to adjust. Automatic in operation. Economical in performance. Built to use waste heat of any kind, such as exhaust gas, hot air, steam, or hot water. Built-in safety feature which prevents liquid from reaching the appliances or engines.

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BUTANE DEALERS

The following Butane equipment information will be given upon request without obligation.

- ☐ Domestic Gas plants.
- ☐ Motor Conversions.
- ☐ Meter Dispensing Systems.
- ☐ Stand-by plants.
- ☐ Central plants.
- ☐ List Special Requirements.....

BUTANE LTD.

Consulting & Manufacturing Engineers
2146 W. Washington Blvd., Los Angeles
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Open Cylinder Weathering Test

- The Natural Gasoline Association of America has published its tentative revisions of the specifications and test methods for liquefied petroleum gases that serves as a guide to members and a large portion of the industry. The specifications were printed in the July, 1940, issue of BUTANE-PROPANE News, (Page 23), and the mercury freezing test appeared in the December issue (Page 49). Here is quoted another one of the tests that has been approved.—Editor.

THE open cylinder weathering test for determination of the nature and extent of contamination of commercial butane with heavier hydrocarbon materials is as follows:

Scope

1. This method is intended for the determination of the nature and extent of the contamination of commercial butane with higher boiling hydrocarbon materials.

Apparatus

2. The apparatus shall consist of the following:

(a) *Graduate.* The graduate shall be of cylindrical type, of uniform diameter, with a pressed type, of uniform diameter, with a pressed or molded base and a lipped top. The cylinder shall be graduated to contain 100 ml., and the graduated portion shall be not less than 7 inches (17.78 cm.) nor more than 8 inches (20.32 cm.) long. It shall be graduated in single milliliters and each fifth mark

shall be distinguished by a longer line. It shall be numbered from the bottom up at intervals of 10 ml. The overall height of the graduate shall be not less than 9¼ inches (24.8 cm.) nor more than 10¼ inches (26.0 cm.). The graduation shall not be in error by more than 1 ml. at any point on the scale.

(b) *Water Bath.* The water bath shall be a shallow pan capable of accommodating several graduates. It shall be filled with clean water to a depth of 1½ inches. The bath shall be maintained at a temperature of 60° F. to 70° F.

(c) *Thermometer.* The thermometer used shall conform to the following requirements. These specifications cover a mercury in glass thermometer graduated in Fahrenheit degrees as specified and scaled for 3 in. immersion.

Type: etched stem, glass.

Liquid: mercury.

Range and Subdivision: -40 to 120° F. in 1° F. intervals.

Total Length: 300 to 310 mm. (11.8 to 12.2 inches).

Stem: plain front, enamel back, suitable thermometer tubing, diameter 6.0 to 7.0 mm. (0.24 to 0.28 inches).

Bulb: Corning normal or equally suitable thermometric glass. Length, 15.0 to 20.0 mm. (0.59 to 0.79 inches). Diameter, 5.0 to 6.0 mm. (0.20 to 0.24 inches).

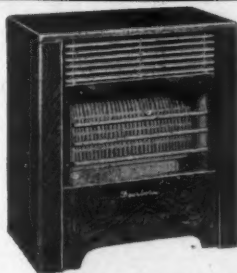
Distance to -40° F. Line from Bottom of Bulb: 95.0 to 105.0 mm. (3.74 to 4.13 inches).

Distance to 120° F. Line from Top of Thermometer: 45.0 to 60.0 mm. (1.77 to 2.36 inches).

Filling Above Mercury: Nitrogen gas.

Graduation: All lines and figures clear cut and distinct. The first and each succeeding 10° F. line to be longer than the remaining lines.

WHEN YOU THINK OF GAS HEATERS THINK OF **DEARBORN**



... The Quality
Line with the
Outstanding
Selling Features.

Extra-Safe
COOL CABINETS

Fine Furniture-Like
FINISHES

Amazingly Efficient
L.P.G. BURNER

Matchless Low-cost
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Write today for Free descriptive folder,
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MR. L P-GAS DEALER!

A Continental Catalogue
Is the First Step to New
Profits for You

Write today for booklet
that will give full information
on the complete
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has for the LP-Gas
industry.

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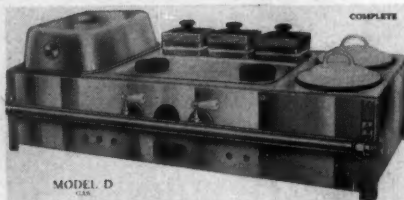


Water Heater Co., Ltd.

1637 N. Spring St.

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PROFITS



MEXIHOT BARBECUE

HAMBURGER MACHINES

Thousands of installations in drug stores, tap rooms, roadside stands, cafes and other places that serve lunches have brought big repeat business. Low price means quick sale. Above model \$38.50, other sizes in proportion. Write for distributorship at once.

Department B6
DICKERSON MANUFACTURING CO.
Springfield, Missouri

Graduation to be numbered at each multiple of 10° F.

Immersion: 3 inches.

Scale Error: The error at any point of the scale when the thermometer is properly standardized shall not exceed 1° F.

Procedure

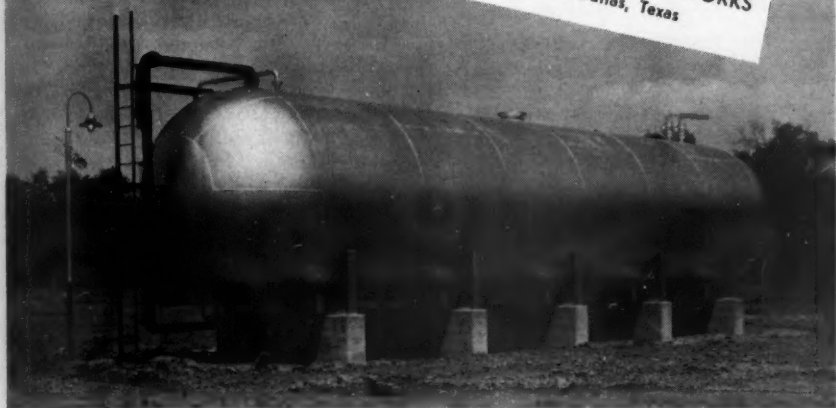
3. The graduate shall be thoroughly rinsed and chilled in the product to be tested prior to the actual sampling. One or two grains of charcoal shall be added at this point. The thermometer shall likewise be chilled with the product. The graduate with the thermometer inserted shall next be filled up to the 100 milliliter mark with the sample to be tested, ample precautions being taken to avoid losses by evaporation.

(a) The filled graduate shall then be placed in the water bath held at 60° F. to 70° F. and the contents allowed to weather. The thermometer shall not be removed from the graduate during the test and all readings taken shall be with the thermometer bulb just off the bottom of the graduate. The temperature at which ebullition becomes regular shall be recorded as the initial boiling point. The weathering shall be continued in this manner until 10 ml. of residue remains at which point the temperature shall be recorded. Further weathering shall be conducted with the graduate held in an inclined position in the bath, volume readings being taken periodically by returning the graduate to its normal vertical position. The thermometer bulb shall be held, while determining the temperature, so as to be as completely immersed as possible without touching the sides or the bottom of the graduate.

(b) The temperature noted when

API-ASME Code Propane Storage
Tank (12'x50') Ex-rayed
and stress relieved. . . .

Wyatt's
WYATT METAL & BOILER WORKS
Houston & Dallas, Texas



Are you getting these **EXTRA PROFITS?**

• Dollars of additional LPG sales are waiting for you in the huge food service market. Every hotel, restaurant, lunchroom, church or institution is a large potential user of your LPG. Get more of this business by selling Blickman food service equip-

ment—especially designed for use with LPG. Blickman equipment is unmatched in reputation for good design and excellent construction. It will build goodwill for you through years of low-cost, trouble-free operation—at the same time adding dollars to your LPG sales.

Send now for catalogs showing our complete line. Every item is an LPG sales builder.



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Manufacturers of Food Service Equipment
WEEHAWKEN, N. J.

We would like to increase our LPG sales with your food-service equipment. Please send catalogs showing complete line including Coffee Urns, Steam Tables, Luncheonettes, etc.

Name

Address

City.....State.....

BPN-1-41

"HEATWAVE" CONSOLES

Designed for the L.P.G. Industry, with burners and controls to meet the specific requirements of Liquefied Petroleum Gases, PLUS the famous "Day & Night" Heat Trap.



RADIATE AND CIRCULATE HEAT

Radiant Heat through the lower "RADIATOR" plus circulating heat through upper louvers keeps the "living zone" evenly heated.

A.G.A. Approved for Vented and Unvented installation. Manual, Semi-Automatic, or Fully Automatic Controls. Forced circulation (Fan Unit) optional.

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MONROVIA CALIFORNIA

In the MIDDLEWEST

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PETER FISH INDUSTRIES

Incorporated

for

**CENTURY CARBURETORS
LEONARD SPARK PLUGS**

SELWYN FITTINGS

F & E TORCHES

TOKHEIM DISPENSERS

LP-GAS TRUCK TANKS

plus

Engineering Service

612 N. MICHIGAN AVE.

CHICAGO

Write for dealership

the residue is 5.0 ml. shall be recorded and a similar record shall be made of the final temperature obtained, recording it as the final boiling point. The observed temperature shall be corrected to a barometric pressure of 740 millimeters by adding 0.594 degrees to the observed temperature for each 10 millimeters the test is conducted below 740 millimeters pressure, or subtracting 0.594 degrees from the observed temperature for each 10 millimeters the test is conducted above 740 millimeters pressure.

Interpretation of Results

4. The observations may be converted to terms of pentane contamination by the following table:

Corrected Temperature at 5 ml. Residue	Pentane Content
30° F.	0.3% by volume
31	.08
32	1.1
33	1.6
34	2.1
35	2.6



Minnesota Gas Company Wins Sales Honors

The C & I Natural Gas Co., of Cokato, Minn., under the proprietorship of Chester Ogaard and Iver Loe, achieved double distinction in a recent fall sales contest sponsored by the Pyrofax division of the Carbide and Carbon Chemicals corporation of New York.

Embracing the months of August, September and October, the local concern was seventh in the nation for exceeding its quota, while Mr. Ogaard was high man in the northwest for individual sales of appliances during the same period.

Hand Fire Extinguishers

A SLIGHT accident or a moment's carelessness may start a small fire at any time where there are materials that will burn.

Extinguish Fires Quickly

A small fire can easily be put out if the proper means are at hand, but if it is allowed to spread, it may destroy life and a great deal of valuable property. Therefore, every building where a serious fire can happen should be protected with some means of extinguishing small fires quickly.

Hand fire extinguishers are designed especially for this purpose. With an extinguisher of the right kind, a fire can be fought effectively from a safe distance, but if a less suitable weapon is used, it may not only fail to put out the fire but may bring the user dangerously close to the flames. Many lives and immense property values are saved every year by the prompt use of hand extinguishers.

Use Tested Extinguishers

Reliability.—Hand fire extinguishers bearing the labels reading "Underwriters' Laboratories Inspected" and the letters "F.M." in a diamond-shaped design have been tested by recognized fire-protection authorities and conform to accepted standards, including those of the U. S. Government. Extinguishers so marked are known to be reliable.

CLOW GASTEAM RADIATORS

combine

the **SUPERIORITY** of radiator heating
the **FLEXIBILITY** of individual heaters
the **CONVENIENCE** of butane gas



JASPER COUNTY COURT HOUSE
AND JAIL
BAY SPRINGS, MISSISSIPPI

CONSTRUCTION

Court House: Walls—14" brick, plastered, with gable roof.

Jail: Walls—12" concrete with composition flat roof on concrete slab.

SIZE OF BUILDINGS

Cubical content, court house.....	179,460 cu. ft.
" " " jail	29,640 cu. ft.
Floor space, court house.....	11,610 sq. ft.
" " " jail	1,976 sq. ft.

HEATING SYSTEM

46 Clow Gasteam Radiators.....3,389 sq. ft. steam

BUTANE CONSUMPTION

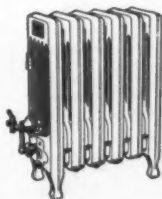
Season 1939-40 . . . 2859 degree days . . *6,060 gallons

*This includes heating water for both buildings

HEATING REQUIREMENTS

2151 degree days normal

Radiation sized for +10° F. outside temperature.



Each radiator makes its own steam heat with gas.

No basement, boiler or steam piping used.

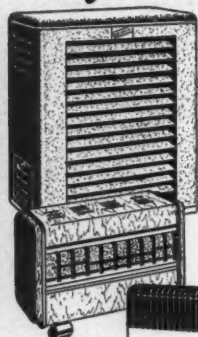
*For Heating a Single Room
or an Entire Building*

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201-299 North Talman Avenue

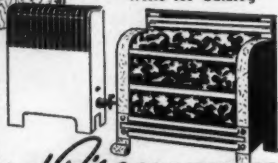
Chicago, Ill.

Profit Building LPG HEATERS



LPG Dealers find real profit in BRILLIANT FIRE sales because the product is time-tested, trustworthy. Geared for economy operation and negligible servicing. These popular heat-makers are offered in a variety of styles for every home need.

Write for Catalog



Brilliant Fire GAS HEATERS

THE OHIO FOUNDRY & MANUFACTURING CO.

QUALITY HEATING EQUIPMENT SINCE 1846
STUEBENVILLE, OHIO



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BUTANE

We make wholesale deliveries by
Transport, Tank Car or from one
of our Bulk Plants.

Exclusive Distributors

SMITH STEEL TANK CO.
Manufacturers of A.S.M.E. code tanks

For further details write or wire

R. J. ALLISON CO.
P. O. Box 23 TULSA, OKLA.

Types of Hand Fire Extinguishers.—There are several different types of hand fire extinguishers, each of which is suitable for certain special purposes. To make sure of the right protection, it is well to consult a representative of a reliable fire extinguisher manufacturer.

Location.—Fire extinguishers should be conspicuously located in places where they can be easily reached, and, also, always near exits so that the user can get out safely, if necessary.

Put Them in Proper Places

Extinguishers can be hung on hangars, supported by brackets, or set on shelves, but the top of the extinguisher should never be more than five feet from the floor. The space around them should always be kept clear of boxes, barrels, or anything which might make the extinguishers difficult to reach when needed.

Operation.—All approved hand fire extinguishers are easy to operate and carry labels with directions for operating. It is well, however, for everyone to know, in advance, how to handle and operate extinguishers so that no time will be lost when prompt action is needed.

In fighting fires in ordinary combustible materials with a fire extinguisher, always direct the stream at the base of the flames so that the burning materials will be cooled and quenched.

In fighting fires in flammable liquids, be sure that you use the right type of extinguisher, since, if water is thrown on the flames,

it will merely scatter them and make matters worse. If the burning liquid is in an open pan, pail, or tank, play the stream from the extinguisher on to the inside wall of the container just above the burning surface. If the burning liquid has been spilled on the floor or ground, play the stream on the edge of the liquid nearest you and slowly move forward, moving the stream from side to side, until the entire area has been covered.

Two or more people with two or more fire extinguishers and plenty refill materials may be able to keep a large fire in check, or protect a nearby building from catching fire until help arrives.

Don't Neglect Recharging

Maintenance.—Fire extinguishers must be ready for instant use at all times. This means that they must be inspected often and properly maintained.

It is important to remember that certain types of fire extinguishers must be discharged and recharged once a year, while others need only to be checked to make sure that they are in good working order. In every case, maintenance and recharging instructions are carried on each extinguisher. These should be followed carefully.

All extinguishers should be inspected at least twice a year to make sure that they have not been tampered with or discharged and replaced without recharging, that the nozzle opening is not clogged, and that no parts have been damaged.

In recharging extinguishers or

COMPLETE FACILITIES

BUTANE
OR
PROPANE

Vitally important to every retail marketer of these products, is a dependable and reliable source of supply. Such assurance is yours when you buy Philgas Butane or Propane. Without qualification, Philgas has the most complete production, storage and shipping facilities in the industry. Philgas service gives you high-quality products produced according to rigid specifications plus deliveries when, where, and as you want them.

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GENERAL MOTORS BUILDING
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THE NATION'S LARGEST MARKETER
OF LIQUEFIED PETROLEUM GASES

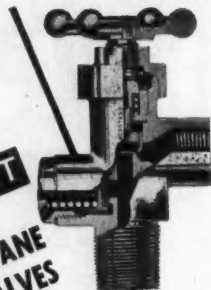
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UNDER ALL
PRESSURES

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**PROPANE-BUTANE
CYLINDER VALVES**

Propane-Butane Cylinder Valves combine the famous Kerotest Diaphragm Packless design, with an automatic spring relief safety device which releases excess pressures only. Write for descriptive catalog No. 1-LP.

**KEROTEST MANUFACTURING
COMPANY**
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**NATIONAL
Thermo-Syphon
SYSTEM**

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**National Automatic Gas
SYSTEM**

Patented Systems
Protected Territories

Write or Phone

National Butane Gas Co.
MEMPHIS TENNESSEE

replacing damaged parts, always use materials supplied by the manufacturer of the extinguisher, since, otherwise, the extinguisher may not operate properly when needed.

Every extinguisher should have a tag attached to it, on which should be written the date, whenever it is inspected or recharged.

Frozen extinguishers are likely to be badly damaged and must not be discharged in the regular way or repaired locally. Remove the contents by taking off the cap and send the extinguisher to the manufacturer for inspection and repair, if this is possible.



Westland Oil Co.'s Convention Delegates See New Plant

More than 100 dealers, bulk agents and salesmen of the Westland Oil Co. met in Minot, N. D., in November in a convention that was timed with the completion of the company's new bottling plant. Jack Coughlin, manager of the bottled gas division, presided over the sessions. The company has installed two 7500-gal. LP-Gas storage tanks in Minot.

Territory covered by the Company's activities extends westward into Montana and as far south in North Dakota as Jamestown.



New Butane Dealership Established in Texas

A. L. Wylie and Son announced recently their appointment as butane dealers in Petersburg, Tex., and stated that they were prepared to deliver butane gas systems.

The Wylies will handle the butane dealership in connection with their regular oil and gas business, with headquarters at the Wylie service station in Petersburg.

Wanette, Okla., Using Propane, Gets Natural Gas Again

Natural gas service was restored to citizens of Wanette, Okla., Nov. 7, after the town had been cut off from this fuel for about two months. (See Butane-Propane News, Page 34, Nov., 1940.) Fife Brothers re-connected the gas distribution system of the old Wanette Gas Co., with a supply of natural gas after making some repairs to the lines.

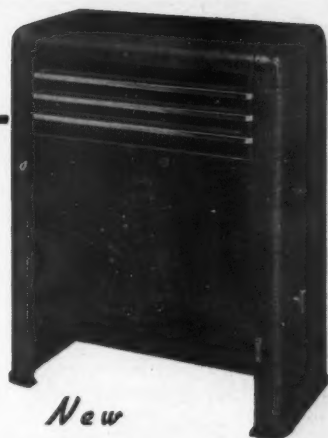
In the meantime a number of customers of the former natural gas company had gone over to propane gas service furnished by the American Butane Gas Co., Oklahoma City.

Seven days after Fife Brothers had taken over the system at Wanette, the Oklahoma Corporation Commission issued an order granting the application of D. A. Killingsworth to discontinue the service he formerly had been giving under the name Wanette Gas Co. Mr. Killingsworth acquired the franchise and the gas distribution system at Wanette from the Seminole County Oil and Gas Co. Dec. 1, 1939, but stated in an application a few months ago to the Corporation Commission that he was losing money and asked to be relieved of responsibility of further distributing. He discontinued his service Sept. 1 without waiting for an order of the Corporation Commission.

Eastern Montana Hotel Installs Butane Heating System

An automatic butane gas system was recently installed in the Gorham hotel in Scobey, Mont. The plant includes two 1000-gal. storage tanks. The installation was made by Jack Smith, of Billings.

P. R. Gorham has secured a franchise for butane gas and appliances in northeastern Montana and has a selling crew in the field.



New Thermolator A Big Seller!

★ THE "PACIFIC" Thermolator for 1941 has *everything* . . . beauty, efficiency, economical performance, and right price! Shown here is the Model "TN" Unvented Thermolator.

There's a big market for "Pacific" Warm Air Circulators which are made in a wide range of sizes in vented and unvented models. The handsome cabinets are available in an assortment of hand-grained finishes. Let these popular heaters bring you good profits on installations in homes, auto courts, resorts, schools and the many other "hot" prospects for LPG appliances of "Pacific" quality.

Write TODAY for complete information on Thermolators, also the complete line of "Pacific" Floor Furnaces, Wall Heaters, Central Heating Units, Water Heaters.

Please address Dept. BN-1.

PACIFIC GAS RADIATOR CO.
Main Office and Factory
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*For Safety
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ETHYL MERCAPTAN

—Purified—

The **ACCEPTED**
standard
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**MALLINCKRODT
CHEMICAL WORKS**

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"HEAT LIKE SUNSHINE"

THE VITARAY

Line Consisting of
**RADIANT, FIREPLACE
INSERTS, WALL INSERTS,
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are especially designed for and

A. G. A. APPROVED

on Liquefied Petroleum Gases

Write for Complete
Literature and Prices.

**THE QUAD STOVE MFG. CO.
COLUMBUS, OHIO**

Scaife Co., Founded in 1802, Changes Firm Name

Announcement is made that after Jan. 1, 1941, the Wm. B. Scaife & Sons Co. will be officially known as Scaife Co. This change, made in the interests of simplifying the name, in no way affects the corporate structure or management of this 139-year-old manufacturer of range boilers, tanks and gas cylinders.

Founded in 1802 by Jeffery Scaife, the original shop was in what is now downtown Pittsburgh. In 1892 the plant was moved to Oakmont, Pa., a suburb of Pittsburgh, where the laboratories, general offices and works are now located.

Since its origin, the firm has been continuously managed and operated by the Scaife family, direct descendants of the founder. For five generations, sons have succeeded their fathers as head of the company. Officers now are J. V. Scaife, Jr., president and chairman of the Board; Alan Magee Scaife, vice president and director.

A. G. A. Laboratories' Engineer Enters Commercial Field

H. L. Shufflebarger resigned Nov. 1 from the American Gas Association Testing Laboratories to take up new duties with the Lennox Furnace Co., of Columbus, Ohio.

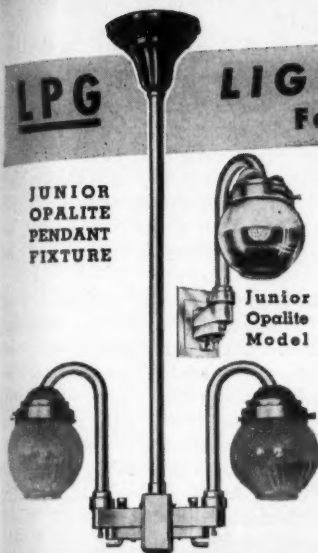
Employed in the Laboratories in various capacities, Mr. Shufflebarger secured a thorough training in the testing of different types of appliances, particularly central heating equipment. This experience affords his background for new responsibilities as development engineer in his new position.

Mr. Shufflebarger is the 114th engineer to undertake other duties in the gas industry after a preliminary training at the American Gas Association's Testing Laboratories.

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LIGHTING FIXTURES For WALL and CEILING

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OPALITE
PENDANT
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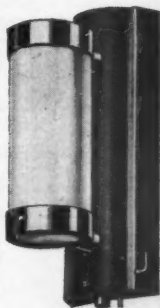


**Junior
Opalite
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Now that gas lighting has "gone modern" with Humphrey glare-proof Opalites an important extra market is opened for Liquefied Petroleum Gas.

These lights are ideal for stores, offices, and homes— attractively designed, and burn with a soft glow of high candle power, yet are restful to the eyes. They are inexpensive—dependable in operation — built of materials that will keep their beauty for many years.

Send for complete information.



**HUMPHREY
OPALITE**

GENERAL GAS LIGHT CO., Kalamazoo, Mich.

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specify
AMERICAN
Butane & Propane
pressure tanks
in 1941*

**C I A C
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ASME
Codes**

OUR PRESSURE TANK EXPERTS

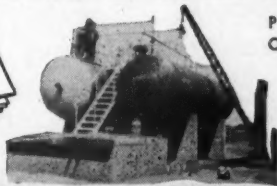
are ready at all times to consult with you on whatever your requirements may be on High Pressure Tanks. From initial consultation, to plans, to finished product you deal with experts who place at your disposal years of valuable experience . . . superior craftsmanship and unsurpassed efficiency. Consult American and be assured complete satisfaction in solving your storage problem.

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STORAGE-SKID and MOBILE TANKS-HOUSEHOLD BOTTLES

JANUARY-1941

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SHIPPED RAPIDLY FROM OUR
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Liquefied Petroleum Gas Equipment

ROBERTSHAW MANUALS

will help increase your sales



FOR DOMESTIC SALESMEN

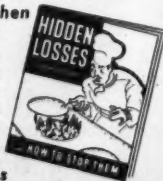
"More Income from Gas Ranges"

How can your salesmen sell more gas ranges? This manual shows simply, graphically, convincingly. Thousands of salesmen have greeted it with enthusiasm, are putting it to effective use.

FOR COMMERCIAL SALESMEN

"Hidden Losses in Your Kitchen and How to Stop Them"

The latest developments in commercial gas cooking equipment are brought together in this manual, now used by many bottled gas dealers.



Write for free copies

ROBERTSHAW THERMOSTAT COMPANY

YOUNGWOOD, PA.

Oakwood, Okla. School Installs Butane Plant and Heaters

Thirty fully vented circulating heaters will be a part of the equipment to be installed in the Oakwood consolidated school, at Oakwood, Okla., by Butane Consolidated, Oklahoma City, Okla., according to W. L. Elkin and C. G. Berry, owners of the firm.

The butane equipment for the school building, which is a WPA project, will include a 1000-gal. tank equipped with heat exchanger. The auditorium will be heated by two suspended unit heaters of approximately 125,000 B.t.u. capacity each. The 30 circulating heaters, with capacities ranging from 30,000 to 40,000 B.t.u.'s each, will be installed in the school class rooms.

Butane Consolidated recently also installed a 1000-gal. butane tank for heating the flower greenhouse and residence of O. T. Peck, at Tahlequah, Okla.

Butane Used in 43 New Homes in Subdivision of Tucson, Arizona

Butane, supplied from individual tanks, has been provided for heating and cooking in 43 new, modern homes recently built in the new Los Ranchos Perkins subdivision in the Catalina foothills area of Tucson, Ariz., according to news reports.

These homes, overlooking the Tucson valley, priced from \$4000 to \$5000, are completely furnished, having automatic gas furnaces and water heaters, furniture, Navajo rugs, kitchenware and linens.

The majority of these homes are located on the higher mesas in the foothills away from the heat and dust of the city and, because they are modernized with butane, Leroy C. Perkins, real estate agent, expects a rapid sale of this property.

Dakota Gas Company Holds Convention in Carrington

Approximately 150 retail dealers attended the all-day convention of the Dakota Gas Co. held Oct. 30 at the company's Carrington, N. D., warehouse. Demonstrations were given and appliances shown.

Speakers were present from Chicago, Minneapolis, Milwaukee and Tulsa and were mostly executives of the companies that supply the gas or manufacture the appliances distributed by the company. A noon luncheon and evening dinner were served at the warehouse.

The company's business was formerly handled from its main warehouse at Bemidji, Minn., but because of a recent business growth a new state distributing plant was established in Carrington, N. D., last August. The Dakota Gas Co. is owned by W. E. and D. E. Shettlemore, proprietors of Bemidji Bottlegas Co.

The Bastian-Blessing Co. Will Distribute Forster Torches

The Bastian-Blessing Co., Chicago, has taken over the distribution of the Forster torch line manufactured by Ransome Co., Emeryville, Calif., for the entire United States east of the Rocky Mountains.

Forster torches are designed especially for use with butane and propane gases and they are widely known to the liquefied petroleum gas industry. Their use for heating, metal working, soldering, paint burning, lead melting, etc., offers another outlet for butane and propane gases for industrial purposes.

The Bastian-Blessing Co.'s sales organization and distributors will handle the sale of this equipment. A complete stock of Forster torches will be maintained at the company's plant in Chicago, Illinois.

A Good Gas Load Builder



A. R. WOOD RADIANT GAS BROODER

200,000 prospects are ready to buy liquefied petroleum gas for brooding, once they have used it with the A. R. WOOD "Radiant" GAS BROODER. It is the finest brooder fuel available because it is safe, economical, dependable, and clean. The Wood brooder is built especially for this fuel. Thousands of satisfied users throughout the U. S. Factories east and west.

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PROPANE - BUTANE SERVICE

Write for Particulars

SPRAGUE METER COMPANY

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A SIGN OF QUALITY

The "Winged Diamond" is your guarantee of quality. It has met standards of the United States Navy, Department of Interior, Union Pacific Railroad, and many others. Join those who demand the best. Use ALGAS BUTANE CARBURETION!

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American Liquid Gas Corp.

1109 SANTA FE AVENUE
LOS ANGELES, CALIF.

Patent Suit Decision Favors Southern Steel Co.

Judge T. M. Kennerly, of the U. S. District Court for the Southern District, Texas, handed down a decision on Nov. 16 favoring the plaintiff in the case of Southern Steel Co., of San Antonio, vs. Butane Gas System Co., of Dallas, and Butex Gas Co., of Houston.

The suit involved the rights of the plaintiff company covering liquefied gas equipment under Patent No. 2,121,675, issued to Loyd J. White, vice president of Southern Steel Co., upon which The Bastian-Blessing Co., Chicago, holds an exclusive manufacturing and sales license issued by Southern Steel Co.

Roger Tennant, of Butane Gas System Co., has filed an appeal from the decision on Dec. 16.

General Controls Issues New 1941 Catalog

General Controls Co., Glendale, Calif., has just published its 1941 catalog, No. 50. It consists of 48 pages and is complete with engineering description and charts, performance tables and diagrams of each item in the company's line of automatic pressure, flow and temperature controls. Copies may be obtained by those interested.

In the catalog are listed the new V-300 gas regulators, for low pressure installations; a new manual reset valve, the MR-1-2, for control of liquids, vapors and gases, and the complete new line of T-80 series thermostats.

Texas Butane Distributor

C. H. Elliott, of Spur, Tex., is now prepared to give butane service at both Paducah and Dickens, as well as Spur. Mr. Elliott also maintains a retail store at Flodada, Tex.

Anchor Petroleum Is Building New Natural Gasoline Plant

The Anchor Petroleum Co., through its affiliated company, the Anchor Gasoline Co., has under construction a natural gasoline plant located in the Eola field near Bunkie, Los Angeles, according to W. A. Baden, vice president of the company.

The plant will be completed about Feb. 1. After that date deliveries of butane will be made from the plant. Although it is not known at this time what the exact butane production will be it is expected to be quite large.

From the new plant butane will be delivered to local tank trucks and tank cars for shipment to southeastern accounts of the company.



Appliance Directory Listings Must Be In By Jan. 1

Application for approval or listing forms for the calendar year 1941 were distributed Dec. 2 to all manufacturers of gas appliances and accessories, as well as to dealers to whom extensions of approval have been granted by the A. G. A. Testing Laboratories.

In order that products of these manufacturers and dealers may be listed in the Jan. 1, 1941, Directory of Approved Gas Appliances and Listed Accessories, these applications must be duly signed and returned to the Laboratories on or before that date.



B. Maynard Leaves Rulane Gas

Brant Maynard, who joined the Rulane Gas Co., of Charlotte, N. C., in October is no longer associated with the company, according to T. A. Eakins, treasurer.

Mr. Maynard was formerly connected with the butane industry in Tuscaloosa, Fla.

Reduce
SERVICE CALLS
... save money

**TROUBLE-FREE
PACKLESS TYPE MANIFOLD**
Has 2 manifold valves that operate on cam and lever principle. Practically wearproof. Diaphragm seals gas against leakage into upper casing.



TYPE
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FISHER

TWO DRUM ASSEMBLY WITH THROW-OVER MANIFOLD

- Positive stop at end of lever's travel arc prevents manifold breakage.
- Lever always points to supply cylinder.
- Maintains positive shut-off on reverse cylinder at all times.
- Capacity 90 cu. ft. Propane per hr. on 10 lbs. cylinder pressure. Greater capacities on higher cylinder pressures.
- Listed as standard by the Underwriters Laboratories.

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As the old year fades and the new begins it is our opportunity to put aside the routine and customs of everyday business and in real sincerity wish our friends all the best in the year and years to come.



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Peerless Wall Heaters

Today Buyers everywhere are demanding Peerless Gas-Fired Wall Type Bathroom Heaters.



No. 7602

They are nationally accepted!
1939 Sales more than 30 times 1934.
White or colored enamel finishes.

Write for complete catalogue and prices.

PEERLESS MANUFACTURING CORP.
LOUISVILLE, KENTUCKY

Skelgas Agent Sells Butane Business in Bloomer, Wis.

Ralph Kuhlman, Skelgas agent in Bloomer, Wis., has sold his LP-Gas business to G. W. Brolley, of Chicago.

Mr. Brolley became interested in the local field through vacationing at the lakes near Bloomer where he used butane in the resorts. He will move to Bloomer in the spring and in the meantime Lawrence Boettcher will manage the business.

Mr. Kuhlman has gone to Bogalusa, La., with his family, but expects to again be identified with the industry after the first of the new year.

Ohio Gas and Electric Co. Formed in Columbus

Formation of the Ohio Gas and Electric Co., 1469 E. Livingston Ave., Columbus, Ohio, was announced Oct. 15 by Charles B. Temple, owner and manager of the new firm. Vern Swarthout, office manager and Charles Martin, construction superintendent, will assist in the enterprise.

The firm will operate in 10 counties and will employ about 40 persons. Gas deliveries will be made to customers from district offices throughout the territory. The company will distribute Protane Natural Gas, a product of the Protane Corp.

Ewing Butane Gas Co. Moves Into Larger Quarters

The office and wholesale warehouse of the Ewing Butane Gas Co., formerly located at 2507 Pacific Ave., Dallas, Texas, has been moved to enlarged quarters at 2308 Pacific Ave. The new location is approximately twice as large in floor space as the former one.

The company, of which Robert Ewing is owner and operator, manufactures Pioneer insulated systems.

Enlarges Office and Plant For Second Time This Year

For the second time this year Dallas Tank & Welding Co., Inc., is enlarging its plant capacity, according to W. W. Banks, president. Last spring the company enlarged its facilities and is now bringing to completion certain other additions, including a new 30x92 ft. butane shop which will be utilized in welding, testing, and assembling butane systems. This building will also house a new pit for testing the systems, which will greatly facilitate such work.

A shed, 16x70 ft. is being erected at the side of this building and will be used for storing butane tank heads and Rego units. A present building which has been used for heavy equipment is being extended 20 ft., bringing the dimensions to 40x200 ft. Another building, 32x45 ft., where underground gasoline tanks and stream-line truck tanks will be constructed, has also been completed. All floors are concrete. The plant now occupies 11 lots. The shop office has also been doubled in size and Thomas E. Wideman, formerly of Humble Oil & Refining Co., has been placed in charge of this office.

The general offices of the company have also been enlarged as part of the current program, with a larger private office being provided for Mr. Banks. Other private offices have been constructed for Mrs. Sue Gibbons, secretary and treasurer of the company, and for an assistant to Mr. Banks. The office of W. C. Jack, engineer of the company, has been enlarged and completely glassed in and additional space has been provided for a growing office force which will be added in 1941.

The company built and sold 900 Economy Butane plants in October which surpassed the peak last year.

This is METALBESTOS



"The Perfect Gas Vent and Flue Pipe"

L.P.G installations require the ultimate in burner performance. Only METALBESTOS will provide proper draft which insures high efficiency and safety. It eliminates condensation—its insulating air space keeps the burnt gases hot until exhausted to the outer air.

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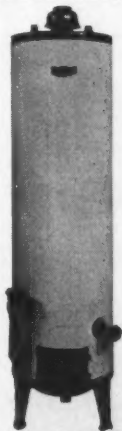
WILLIAMS-WALLACE CO.

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SAN FRANCISCO



AUTOMATIC "Liquid Gas" WATER HEATERS



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COMPLETE RHEEM LINE
15 to 95 Gallon
Capacities

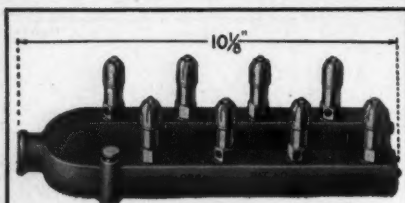
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100% SAFE
Equipped with
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EFFICIENCY
*Designed and tested
for long life and
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No. C. L-80 Burner

BARBER APPLIANCE BURNERS

For every appliance, there is a Barber Burner unit with proper jets, and correctly designed, to suit the combustion requirements of Butane or Propane Gas, and to fit the appliance itself. Eliminate servicing and back firing. Every distributor of these fuels, as well as appliance builders, can best serve their customers by recommending the use of genuine Barber Burners. Submit your burner problems to us. Write for Catalog showing complete Barber line.

The Barber Gas Burner Co.

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Cleveland, Ohio

CROWN GAS RANGES for LIQUEFIED GAS



MAKE THE "CROWN"
YOUR SALES LEADER
FOR 1941.

See our complete display at the January
market—1464 Merchandise Mart—Chicago.

CROWN STOVE WORKS

4631 W. 12th PLACE, CHICAGO

Originators of BUFFET and DIVIDED TOP GAS RANGES

Montana and North Dakota Gas Dealers Hold Meeting

Hardwaremen and gas dealers from North Dakota and Montana attended a sales meeting in Minot in November, arranged by the Wesco bottled gas department of the Westland Oil Co., in Minot, N. D. Approximately 125 are expected to attend.

Jack Coughlin, manager of the department, was in general charge of the day's program.

The newly-installed propane gas bottling plant and the company's compounding and distributing plant were inspected.

R. J. Coughlin, president of the company, gave opening remarks, and speakers included Harris Goodwin, district manager of The Bastian-Blessing Co., Chicago; K. S. Goodwin, supervisor of retail sales, Westland Oil Co.; Fred Beyer, assistant manager of the Minot Supply company, and Jack Coughlin.

Refinery Supply Co. Issues Testing Apparatus Catalog

A new catalog containing descriptions of testing and laboratory apparatus for liquefied petroleum gases has been issued by the Refinery Supply Co., of Tulsa, Okla., and Houston, Texas.

The catalog is designated as No. 26-A and will be sent to all who are interested.

Ruud Manufacturing Co. Names District Manager

Announcement was made recently by the Ruud Manufacturing Co., of Pittsburgh, Pa., of the appointment of C. A. Brudin as district manager at Baltimore. Mr. Brudin, who has been associated with the Washington branch of the firm for many years, will replace E. P. Game, who has been transferred to Charlotte, N. C.

**COMPLETE ENGINEERED
BUTANE-PROPANE
STORAGE PLANTS**

**TANKS—FITTINGS
I.C.C. CYLINDERS**

KING BROS., Inc.

3500 S. E. 17th Ave. Portland, Ore.

Nationwide Service

*Guarantees constant and
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Liquefied Petroleum Gas

Winter Needs A Filter!



Moisture is more prevalent in butane in winter. Eliminate this and other harmful substances with the new DRYGAS FILTER. Protect delicate mechanism, improve economy and performance. Every filter sold on money-back guarantee. Write for circular.

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**VULCAN COMMERCIAL
COOKING EQUIPMENT
IS A BIG LOAD-BUILDER!**

**Sell more ranges, ovens, broilers,
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Standard Gas Equipment Corp.

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BURNERS and TORCHES

**Especially Designed
For Butane-Propane Gases
For All Purposes
with
Satisfaction Guaranteed**

Write for Dealer Discounts

F & E MANUFACTURING CO.

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CROWN!!

Automatic Gas Water Heaters

**Approved by A.G.A. for
Liquefied Petroleum Gas**

Write for Our Catalog and Sales Handbook

Crown Water Heater Co.

COMPTON, CALIFORNIA

**ECONOMY Installations
Build Increased PROFIT**

● ECONOMY Ranges insure the dependable performance of installations. That's why distributors say they are real profit-builders. Engineered particularly for propane and butane gas, ECONOMY Ranges are priced right, made right.

Investigate ECONOMY Household and Commercial Ranges. Write for 1941 catalogs today.

Comstock-Castle Stove Co., Quincy, Ill.

**RUUD
WATER HEATERS**

**ALL TYPES AND SIZES . . .
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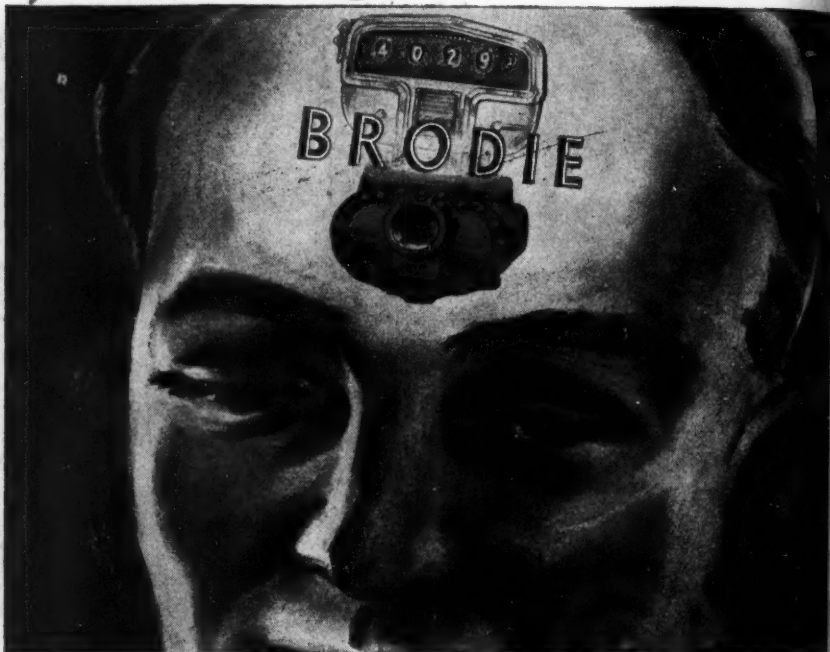
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